Telegram—INMEDICI, CALCUTTA.

This Issue Exceeds 8,750 Copies.

Section W [redacted]

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

MAYO CLINIC LIBRARY
JUL 1 - 1955
ROCHESTER, MINN.

HENNEPIN COUNTY MEDICAL SOCIETY
LIBRARY
FEB 8

Editor: KUMUDSANKAR RAY, M.A., B.SC., M.B., CH.B. (EDIN.), F.S.M.F., M.L.C. (BENGAL)
Assistant Editors: B. P. NEOGY, M.B., M.R.C.P. (LOND.), M.R.C.S. (ENG.)
B. P. TRIBEDI, M.B., D.B. (LOND.), F.N.I.
Secretary: ANILKUMAR CHAKRABARTY, M.B.

Volume XV | CALCUTTA, OCTOBER, 1945 | Number 1

In the Management of Peptic Ulcers
The Adsorbent Antacid
MAGSIL
B.C.P.W. Brand Magnesium Trisilicate Co. Tablet

CONTROLS GASTRIC ACIDITY, ACTION SUSTAINED.
PROTECTS INFLAMED MUCOSA WITH SILICA-GEL COATING.
ADSORBS FERMENTATIVE TOXIC PRODUCTS OF INDIGESTION.
ACTS AS A CARMINATIVE AND MILD LAXATIVE.

Available in Bottle of fifty tablets
Literature on Request

BENGAL CHEMICAL & PHARMACEUTICAL WORKS LD.
CALCUTTA :: :: :: BOMBAY

Association Office
Hindusthan Buildings, Calcutta.

Annual Subscription
Inland Rs. 12/- Foreign £1 or $7

XUM

INDON	**VITAMINS AND VITAMIN COMPOUNDS**	**MADE FROM AMERICAN MATERIALS**	**TABLETS OF GUARANTEED PURITY AND PROPER CONCENTRATION**
VITAMINDON B COMPLEX B_1 5 mgs. B_2 2 „ B_6 1 „ NICOTAMIDE 30 „ YEAST 200 „	VITAMINDON B_1 MILD 1 mg.	VITAMINDON B_1 MEDIUM 5 mgs.	VITAMINDON B_1 STRONG 10 mgs.
VITAMINDON B_1 CONCENTRATED **20 mgs.**	VITAMINDON B_1 EXTRA **50 mgs.**	VITAMINDON B_2 RIBOFLAVIN 3mgs. PER TAB.	VITAMINDON B_6 PYRIDOXINE 5mgs. PER TAB.
VITAMINDON C ASCORBIC ACID **50 mgs.**	VITAMINDON D CALCIFEROL 2500 I.U.	VITAMINDON E TOCOPHEROL **5 mgs.**	VITAMINDON K NAPHTHOQUINONE **10 mgs.**
NICOTINDON P-P FACTOR NICOTINIC ACID **50 mgs.**	NICAMIDINDON NICOTINIC ACID AMIDE **50 mgs.**	YEASTINDON YEAST TABS. REINFORCED BY VITAMINS B_1, B_2, NICOTINIC ACID	FORTINDON B_1, B_2, C, D, NICOTINIC ACID, ARSENIC, CALCIUM, MANG., NUX VOMICA
MULTI-VITAMINDON B_1 5 mgs. B_2 2 „ C 30 „ NIC. ACID 30 „	TONIC 'INDON' LIQUID IRON-VITAMIN B COMPLEX-GLYCEROPHOSPHATES	THE HOUSE OF VITAMINS IN INDIA	INDO-PHARMA PHARMACEUTICAL WORKS BOMBAY 14.

SULPHA DRUGS

in *Bacillary Dysentery*

Experience during the last few years with 'M & B 693', 'THIAZAMIDE' (M & B 760) and Sulphaguanidine 'M & B' has confirmed their value in the treatment of bacillary dysentery.

In fact, sulphonamide therapy is the indicated treatment at the present time.

While the choice of drug largely depends upon individual patients, Sulphaguanidine 'M & B' is the drug of choice in dehydrated patients.

'M & B 693', 'THIAZAMIDE' (M & B 760) and Sulphaguanidine 'M & B' are available in good quantities.

SUPPLIES

* 'M & B 693'—Containers of 25 x 0.50 Gm. tablets.
* 'M & B 693'—Containers of 25 x 0.125 Gm. tablets (Children).
* 'THIAZAMIDE' (M & B 760)—Containers of 20 x 0.50 Gm. tablets.
* 'THIAZAMIDE' (M & B 760)—Containers of 25 x 0.50 Gm. tablets.
Sulphaguanidine 'M & B'—Containers of 25 x 0.50 Gm. tablets.

* Trade Mark.

M&B

MAY & BAKER LIMITED

Distributors for MAY & BAKER (INDIA) LIMITED

524 R

XIIM

For Threatened and Habitual Abortions

PREGNANCIES may be maintained in patients having histories of habitual abortions and in those obstetrical cases with ... painful uterine contractions or associated bleeding ... due to deficiency of corpus luteum hormone.

LUTOCYCLIN (*Progesterone*), the chemically pure, synthetic *injectable* compound with maximum progestational activity is available in 1 cc. ampoules of 2 mg., 5 mg. and 10 mg. in sesame oil.

LUTOCYCLIN TABLETS (*Anhydrohydroxyprogesterone*), the *orally effective* compound with progestational activity is available in tablets of 5 mg.

LUTOCYCLIN
(Progesterone)

LUTOCYCLIN
TABLETS
(Anhydrohydroxyprogesterone)

Further information on request from:

CIBA (India) LIMITED
Pharmaceutical Department.
P. O. Box 479 **BOMBAY**

KEEPS THEM MOVING

In deranged digestive conditions Carbo-Kaolin is an effective and valuable antacid which relieves over-acidity, dyspepsia, indigestion, irritation and ulceration of the stomach, nausea and pain after food, intestinal fermentation and putrefaction and corrects the digestive system from many similar ailments.

Carbo-Kaolin is a well-balanced combination of Carbonates of Calcium, Magnesium and Bismuth, Magnesium Peroxide and Pancreatin in a soothing and absorptive Kaolin base.

Carbo-Kaolin is also available with Belladonna.

Alembic

ALEMBIC CHEMICAL WORKS COMPANY LIMITED, BARODA

ANTISEPSIS

An authoritative statement

'The most reliable procedure for 'the complete elimination of streptococci 'from the naked hands is as follows. 'Wash for one to two minutes in a pint 'of warm water, using plenty of yellow 'bar soap and a nail brush to the nail sulci; 'then pour into the palm of one hand a 'teaspoonful of neat Dettol, or a thin tra- 'gacanth paste containing 30 per cent. 'Dettol, and work into the skin of the 'hands till dry (one to two minutes).'*

An antiseptic with a high Rideal—Walker coefficient whose bactericidal activity is well maintained in the presence of blood, pus and other organic matter; which is lethal to a great diversity of bacteria, including haemolytic streptococci; which is non-poisonous even at full strength and applicable, without causing pain or injury, to raw wounds and surfaces; which does not inhibit the natural processes of repair; which is stable at all clinically desirable temperatures and at all dilutions; which is non-staining, agreeable in use and pleasant to smell.

This list of qualities might well describe the theoretically ideal antiseptic. In fact it describes 'Dettol'—which in ten years has become the antiseptic of choice, for the protection of patients and staff alike, in nearly every hospital in the British Empire.

RECKITT & SONS, HULL AND LONDON, ENGLAND

* Colebrook, L. (1933) *Brit. Med. F.*, **2**, 725.

INTRODUCING

•BIVIPLEX,

a Vitamin B Complex preparation for quick and efficient treatment of B Complex deficiency.

Available as Syrup, tablets and ampoules.

•ANASCAB,

25% W/V Benzyl Benzoate Emulsion for clean and effective treatment of Scabies.

Available in bottle of 4 ozs. and 8 ozs.

•OVESTROL:

A preparation of Stilboestrol Dipropionate in combination with assimilable Calcium, Thyroid and Vitamin B Complex for economical Estrogen Therapy.

Available as tablets, for oral administration and ampoules for Intramuscular use.

Available at all Chemists

CHEMO-PHARMA LABORATORIES LIMITED.

King's Lodge, Lamington Road, Byculla, Bombay.

Agents for:

S. M. C., Carnatak, Kerala and Mysore State.

MESSRS MCKENSONS, Post Box 4533, BOMBAY 8.

Delhi :

Messrs. RANBAXY & CO.,

Post Box No. 104, New Delhi.

Standard's VINKOLA

An Ideal Tonic

A scientific preparation of exceptional recuperative value in all run down conditions, depression and debility and an ideal sustainer during periods of stress and strain

COMPOSITION

Nux vomica, Kola-nut extract, Cinchona, Aromatic bitters, Glycerophosphates, Iron, Calcium, Sodium, Potassium and traces of Copper and Manganese.

Alcohol 30 per cent proof.

SPW

STANDARD PHARMACEUTICAL WORKS LTD.
CALCUTTA

CALCUTTA POLYCLINIC LTD.,
ESTD. 1923
6-A, Surendranath Banerjee Rd.,
Calcutta.

HAEMOCALCIN
Calcium with liver extract and
Vitamin B complex and C
An ideal combination for calcium therapy

ARSENOFIL
For Filariasis.

ALBULACTIN
For non-specific protein therapy.

CONTENTS

Gastric Acidity in Orogenital Syndrome
—K. Mitra, M.B.E., M.B., D.P.H. (Cal.), D.T.M. & H. (Lond.)
AND
N. P. Varma, Capt. I.A.M.C. 1
Preliminary Investigations on the Spreading Properties of Cerebrospinal Fluid
—M. V. Govindaswamy, K. S. Gururajadoss
AND
M. A. Aswatha Narayana Rao 4
Calcium and Coagulation Defects
—D. V. Subba Reddi, M.B.B.S. 5
Correlation of Blood Sugar Values with Glycosuria and their Relation to Treatment
—V. R. Naidu, M.B.B.S., M.S., M.R.C.P. (Lond.), D.T.M. & H. (Eng.), F.A.S.C.P. 6
On the Interpretation of Wassermann and Kahn Reactions
—S. P. Gupta, M.D. (Med.), M.D. (Path.), Dip. Bact. (Lond.) 8
Blood Matching for Transfusion
—Nirmal Chandra Banerji, M.B.B.S., P.M.S. .. 10
Tonsillectomy—Its Use and Abuse in Children
—M. V. Sant, M.S. (Bom.) 13
The Arabian Background of Modern Surgery
—S. Mansur Husain, B.Sc., M.B.B.S. 17
Case Notes:
Headache in Amœbiasis
—K. L. Chowdhury 20
Keratitis Pustuliformis Profunda
—M. B. Dwibedi, D.O., M.B.B.S., ... 20
Editorials:
The War Ends 21
The Coming Conference 21
Current Medical Literature 22
Notes and News 30
Correspondence 34
Reviews 34
Index to Volume XIV .. .. a—f

In all Emergencies!
Iodochlor
THE ORIGINAL DIHALOGEN ANTISEPTIC
Ideal for
LOCAL, GENERAL & INTERNAL USE
UTILITY PACKINGS

2 & 4 Ozs
ALLIED DRUG
CALCUTTA

Issued by ALLIED DRUG INDUSTRIES, LTD.
Chief Sales Office, 2, Mission Row, Calcutta.

HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-

IN THE TREATMENT OF RESPIRATORY DISEASES

In the treatment of tuberculosis and other respiratory diseases doctors find Horlicks a useful dietetic aid

It is a partially pre-digested food containing fresh whole milk and the nutritive extracts of wheat and malted barley. Body building and energy giving elements are present in well balanced proportions. It is particularly useful in febrile cases where appetite and gastric digestion fails. It is well tolerated.

Horlicks requires mixing with water only, but milk, cream or raw eggs can be added if desired.

HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-HORLICKS-

CARIPEPTIC LIQUID

Standardised Enzymes of Carica Papaya with Diastase

Caripeptic Liquid contains in palatable, stable and active form, the proteolytic, amylolytic and rennitic enzymes of Carica Papaya, fortified as to starch digesting power by the addition of diastase. It affords in one prescription a vegetable digestant, plus the carminative and psychosecretory factors necessary in successful treatment.

Caripeptic Liquid is a pronounced carminative. When it is taken after a meal, the immediate subjective effect is a sensation of gastric stimulation; the sense of well-being and comfort spoken of by pharmacologists in describing carminatives. This carminative phase is frequently soon succeeded by evidence of active digestive action apparent in subsidence of the feeling of oppression or discomfort occurring in dyspeptic subjects.

AVAILABLE IN BOTTLE OF SIXTEEN OUNCES

Manufactured by:
The Upjohn Company
KALAMAZOO-MICHIGAN, U.S.A.

Sole Agents:
T. M. Thakore & Co.
43, Churchgate Street
FORT, BOMBAY.

Branches:
12, DALHOUSIE SQUARE, EAST, CALCUTTA.
AHMEDABAD — KARACHI — LAHORE — POONA — MADRAS
NOVA-GOA—RANGOON—DACCA—TRICHINOPOLY—DELHI.

Indispensable

SYELSI

Acid Butter Milk

Milk defatted and Acidified by Lactic Acid culture and Carbohydrate contents readjusted has rendered SYELSI ACID BUTTER MILK a specific Milk Food during Summer, Green and Teething Diarrhœa of Infants. May also be used after Typhoid in habitual constipation and when ordinary Milk is not tolerated.

HONEY CREAM

A mixture of Carbohydrates in different stages of digestion along with sugar obtained from different sources. Highly palatable and suitable for all particularly the babies as a supplement to milk.

THERAPEUTIC LABORATORIES,
68|1-B, SIKDARBAGAN STREET,
CALCUTTA.
'Phone: B.B. 5822. 'Gram: "SYELSI".

Be it . . .

① *Indisposition*

② *Critical stage*

③ *Convalescence*

HI-NUTRON

is your Stand-by..

HI-NUTRON—The original "ampule-idea" of storing pure, concentrated and unadulterated Essence of chicken. Most easily assimilable protein food which provides immediate energy. Leaves no residue and does not irritate the digestive system. Being prescribed daily in military and civilian practice all over the country and the middle east.

Keeps fresh indefinitely in sterilized ampules of 5 and 10 cc. Samples and literature on request.

HIND CHEMICALS Ltd. CAWNPORE

Distributors for:

Bombay Branch: 6, PHIROZSHAH MEHTA ROAD Phone: 34205.

Lucknow Branch: 14, THE MALL, Hazratganj.

Punjab: KISHAN CHAND & CO., LTD., Anarkali, Lahore.

Delhi: LAMB BROS., P.O. BOX III

Sind & N. W. India: LAMB BROS., BUNDER ROAD, KARACHI.

THE STANDARD AMMUNITION

IN YOUR
FIGHT AGAINST DISEASE.

STERILISED INJECTIONS

Rigid scientific control and strict accuracy of ingredients make Alembic Injections remarkable for their purity, uniform quality and prompt action. Being properly sterilised and preserved in neutral glass ampoules, they do not deteriorate. A few of these Injections are listed below:-

Atropine Sulphate.
Cacodylates of Iron & Sodium with Strychnine.
Caffein-Sodio Benzoate.
Calcium Chloride.
Camphor in Oil.
Emetine Hydrochloride.
Ephedrine Hydrochloride.
Iron Cacodylate.
Morphine & Atropine.
Quinine Bihydrochloride in Saccharose solution.
Sodium Cacodylate.
Sodium Thiosulphate.
Strychnine Sulphate.

Write for particulars and Therapeutic notes.

ALEMBIC CHEMICAL WORKS COMPANY, LIMITED, BARODA

Introducing

PENICILLIN
SODIUM

With an established value in the field of military medicine and surgery, Penicillin is now freely available for the treatment of civilian cases.

In rubber-stoppered aluminium-capped bottles of 100,000 Oxford Units.

Further information supplied on request.

BURROUGHS WELLCOME & CO.
(The Wellcome Foundation Ltd. Incorporated in England)
COOK'S BUILDING, HORNBY ROAD,
BOMBAY

BELL'S

HERBAL GERMASE

ORAL and INJECTIONS.

UNFAILING REMEDY.

In all Acute Infectious Diseases and also in Subacute and Chronic Infections.

Free Medical Sample on request.

Packings and Prices.

Box of 6 Amps. of 2 c.c. .. Each Rs. 9|-
20 c.c. Rubber Capped Vial for Injections Rs. 15|-
20 c.c. Corked Phial for Oral use .. Rs. 9|-

Sole Distributor:

DEODHAR BROS.

National Insurance Building, 204, Hornby Road, Fort Bombay 1.

SIMILAC

THE ACCEPTED PRODUCT OF INFANT-FOOD RESEARCH THAT HAS AMAZING SIMILARITY TO BREAST MILK

SIMILAC has the same nutritional qualities as breast milk, and numerous clinical tests have proved its superiority over ordinary milk preparations in digestibility, weight and tissue building qualities and freedom from gastro-intestinal troubles.

Accepted by the *American Medical Association* as the only milk food that approximates breast milk physically, chemically and metobolically and exclusively prescribed by physicians and Pediatricians in the U. S. and elsewhere.

NOW AVAILABLE AT LEADING STORES

Write for Literature to Sole Distributors for India

THE FAIRDEAL CORPORATION LTD.,

LAKSHMI BUILDING, - SIR PHIROZSHAH MEHTA ROAD, - FORT, - BOMBAY.

FC. 13.

Products of Bathgate's Laboratories

CHINIOFON B. P. (YATREN) Powder and solution.

CARBARSONE: Capsules and Tablets in bottles of 20.

SULPHARSPHENAMINE: Tested both chemically and biologically to conform to the International Standard. Issued in the following strengths, 6, 12, 18, 24, 30, 36, 42, 48, 54 and 60 centigrammes.

CARBANTIM: The Carbamide derivative of p-aminophenyl Stibinic Acid for Intravenous injection in Kala-azar. Ampoules of 0.025, 0.05, 0.10, 0.15 and 0.20 gm.

Bathgate & Co.
CHEMISTS CALCUTTA

PRODUCTS OF THE BRAHMACHARI RESEARCH INSTITUTE

Two most recent treatments of **AMŒBIC DYSENTERY**

ARSAMBIDE
(Carbarsone)

Purest *p*-Carbamino-Arsanilic Acid *B.R.I.* Low Toxicity. Most powerful Specific in the treatment of **AMŒBIC DYSENTERY.** It has destructive action on both the cystic as well as the vegetative forms of *Entamœba histolytica.* Supplied in tablets of 0·25 grm. each.

QUINAMBICIDE
(Iodochloroxyquinoline)

A most potent agent for the treatment of acute, sub-acute and chronic **AMŒBIASIS.** A prompt and sure specific. Supplied in tubes of 20 tablets of 0·25 grm. each.
Literature supplied on request.

The most recent treatments of **SYPHILIS** and **YAWS**

THIO-SARMINE

Purest Sulpharsenobenzene *B.R.I.* A trivalent arsenical prepared *for the first time in India.* Low toxicity, cheap in price, most powerful specific. Each carton of **THIO-SARMINE** contains a free ampoule of **SARSO-SOLVENT** for intramuscular injection. Supplied in doses of 0·075 grm., 0·15 grm., 0·30 grm., 0·45 grm., 0.60 grm.

A new bismuth preparation for the treatment of **SYPHILIS**

ACTI-BISMUTH

Purest Ultra-Bismuth in Colloidal Suspension *B.R.I.* Painless intramuscular injection. Supplied 6 ampoules in a box of 1 c.c. each. One ampoule contains 1 c.c. of 5% Suspension, representing 0·05 grm. Bismuth Metal activated.

The most recent treatments of **BACTERIAL INFECTIONS**

SULPHO-CIDINE

Para-amino-benzene Sulphonamide, B.R.I. in tablets for oral administration. Purest Sulphanilamide *B.R.I.* Available in 0·5 grm. or seven and a half grains in each tablet.

SULPHO-CIDINE
(ALBUM) *B.R.I.* **Injectable**

A new soluble sulphanilamide product Colourless injectable chemotherapeutic agent for the treatment of Strepto, Staphylo and Gonorrhael infections by subcutaneous, intramuscular and intravenous routes. Obtainable in packings of 2 c.c. solutions in 3, 6, and 12 ampoules in a box.

The most efficient treatments of **KALA-AZAR**

UREA STIBAMINE
(Brahmachari)

Remarkably beneficial results obtained by its use within the shortest time. To be administered intravenously. Supplied in doses of 0·01 grm., 0·025 grm., 0·05 grm., 0·10 grm., 0·15 grm., 0·20 grm. in separate carbons.

NEO-STIBENE
A product

For children with thin veins and other cases in which it is difficult to give **UREA STIBAMINE** (Brahmachari) intravenously, use **NEO-STIBENE** intramuscularly. Dissolve in **STIBO-SOLVENT** given free in each carton. Supplied in doses of 0·01 grm., 0·025 grm., 0·05 grm., 0·10 grm., 0·15 grm.

THE BRAHMACHARI RESEARCH INSTITUTE
82/3, CORNWALLIS STREET, CALCUTTA.

When replying, please mention the Journal of the Indian Medical Association

XUM

New ZANDU Product

HEPOFERRUM

a powerful Haemopoietic Tonic

Many prominent physicians are finding Zandu's HEPOFERRUM to be a thoroughly dependable and a most powerful tonic upon which they may rely for prompt, gratifying relief of the distressing Symptoms encountered in all types of Tropical Anaemias, Nutritional Setbacks, Debility and convalescence after prolonged illness.

Zandu's HEPOFERRUM produces a response which is equal to that produced by the best of this type of Haemopoietic Tonic.

Zandu's **Hepoferrum** is a superfine combination of Crude Liver Extract, Iron, Manganese, Copper, Malt Extract, Vitamin B Complex, Etc.

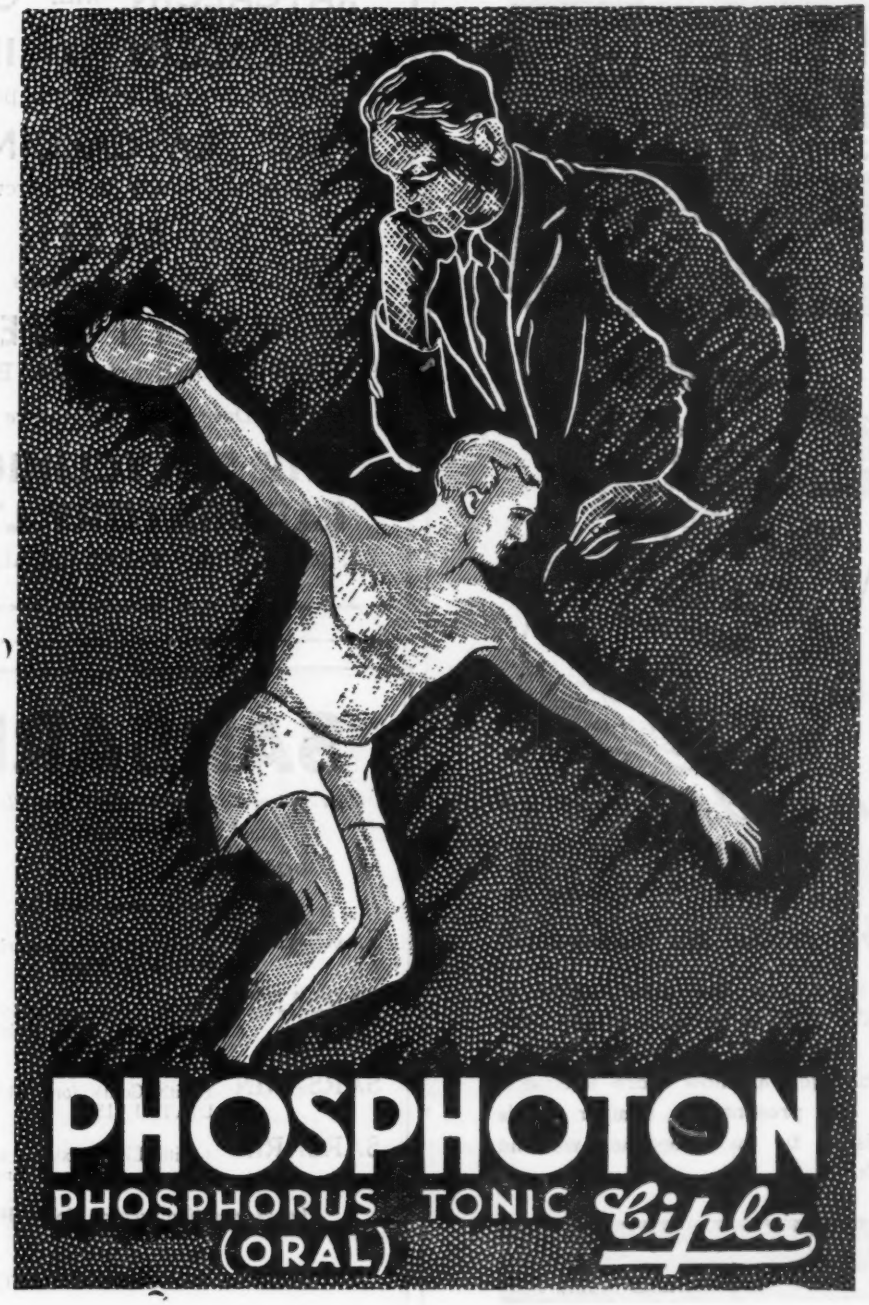
Product of THE ZANDU PHARMACEUTICAL WORKS LTD.

BOMBAY 14.

ALLOPATHIC AGENTS FOR BENGAL:

BOMBAY SURGICO MEDICAL AGENCY

39, Colootola Street, Calcutta.


PHOSPHOTON
PHOSPHORUS TONIC
(ORAL)
Cipla

In this new emergency package

increased supplies of

DEXTROSOL

are now available

Pleased are the distributors of DEXTROSOL to be able to announce that supplies of this valuable therapeutic agent are now more adequate. For the present the familiar tin is replaced by an emergency wartime pack.

CORN PRODUCTS CO. (INDIA) LTD.
P. O. BOX 994, BOMBAY.

RAYCALCIN

RAYCALCIN with GOLD

RAYCALCIN with IRON

(Injections in 5 c.c. and 3 c.c. packings)

SYRUP RAYCALCIN (oral)

Advance Therapy in Tuberculosis

FILARSEN

Specific for Filariasis

POLYTONE

A Unique Restorative & Tonic Preparation

Ask for Descriptive Literature from—

THE POLYCLINICAL LABORATORY LTD.,

1, MOTI SEAL STREET, CALCUTTA.

SARSARIN

An excellent rejuvenating Tonic and Blood Purifier of an entirely new origin.

DOCTOR !

You may safely prescribe

SARSARIN (With Iodised Sarsaparilla) for "Impurities of Blood".

SARSARIN (With Glycerophosphates & Strychnine) for "Sexual Debility, Exhaustion and nervousness".

SARSARIN (With Gold) for "TUBERCULAR DIATHESIS".

SARSARIN (With Liver Extract and Iron) for "Convalescence and Anæmia".

Always mention, which form Wanted.

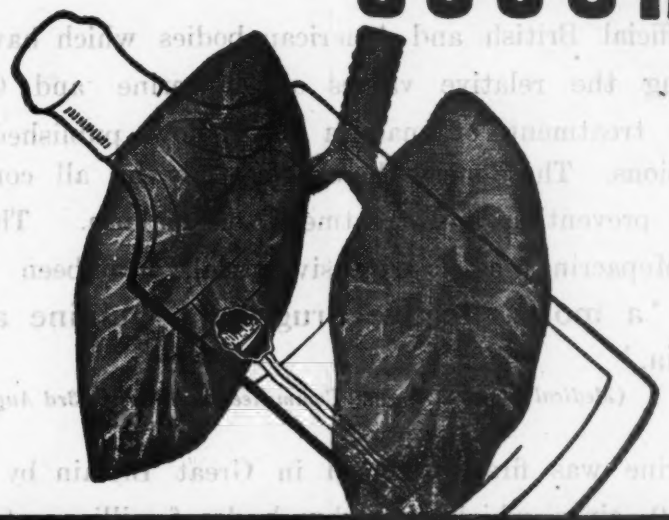
Agents wanted for

MADRAS, COLOMBO & RANGOON.

PEARL CHEMICAL INDUSTRIES,

85, BELGACHIA ROAD,
CALCUTTA.

Soothes & Subdues COUGH



GLYCODIN-TERP-VASAKA

ATTACKS INFECTION AT ITS SOURCE.

Alembic Glycodin Terp Vasaka contains Adhatoda Vasaka with other expectorants and sedatives. It attacks the source of infection, wherever it may be,-in the throat, larynx, bronchi or lungs. It does not check secretions or cause constipation and is extremely palatable.

INDICATIONS: All irritating coughs due to acute or chronic bronchitis, asthma, throat and pulmonary tuberculosis, whooping cough etc.

COMPOSITION

Each fluid drachm represents:-

Antimony Tartrate	1/60 Gr.	Menthol	1/24 Gr.
Terpene Hydrate	1/8 "	Syrup Tolu	15 Min.
Codein Phosphate	1/8 "	Syrup Vasaka	Sufficient

(Also available with Guiacol)

ALEMBIC CHEMICAL WORKS COMPANY, LIMITED, BARODA.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LIMITED

MEPACRINE IN MALARIA

The official British and American bodies which have been studying the relative values of Mepacrine and Quinine in the treatment of malaria have now published their conclusions. These merit the closest study by all concerned in the prevention and treatment of malaria. They are that Mepacrine, after extensive trial, has been proved to be 'a more effective drug than Quinine against malaria.'

(Medical Research Council Committee on Malaria, 23rd August, 1944)

Mepacrine was first produced in Great Britain by I. C. I. in 1940, since which time hundreds of millions of tablets have been, and are being, despatched all over the world.

(Mepacrine is not yet available for distribution in India through normal Trade channels but supplies may be obtained from Government Quinine Selling Agencies.)

Issued by :—

IMPERIAL CHEMICAL INDUSTRIES (INDIA) LTD.

Calcutta — Bombay — Madras — New Delhi — Karachi

NO. 3

CARBACHOL 'M & B'

has a similar, although more powerful action than the acetyl=choline group.
CARBACHOL 'M & B' is of particular value in the treatment of post=operative or post=partum urinary retention, as well as in the treatment of peripheral vascular vasospasm, as in Raynaud's disease or thromboangiitis obliterans. It has also been used with effect in cases of ozoena and glaucoma, by local application in both cases.

SUPPLIES

Tablets: containers of 25 × 2 mgm.

Ampoules: Boxes of 6 × 0.25 mgm.

MAY & BAKER LIMITED

Distributed by MAY & BAKER (INDIA) LTD.

227

BRAHMI LECITHEN CORDIAL

WITH

VITAMIN B COMPLEX

It is the combination of the best Indian herbs and Western Drugs. It contains the Glycerophosphates of Sodium Potassium, Calcium, Magnesium, Iron etc. These are the necessary agents for the building of fresh tissue and replacement of the tissue waste of the brain and other parts of the central nervous system.

Brahmi, Aswagandha, Damiana, Salem Misri are also included in view of their well-known tonic and stimulating effects upon the nervous system.

It is indicated in the treatment of all forms of nervous prostration, nervous debility, sexual impairment and nervous excitement. It is specially recommended for nervous despondency frequently experienced by the Students and by the women at recovery from child birth.

For detailed information please communicate with :—

THE ORIENT LABORATORY, LTD.

With which is incorporated

MEDICAL RESEARCH LABORATORY,

12-A, B & C, MUSSALMANPARA LANE, CALCUTTA.

BD - SPECIALITIES OF WELL TRIED FORMULAS.

BDVINE
The Supreme Tonic

Contains Glycerophosphates, Lecithin, Peptone, Caffiene, Draksharista, Vitamins A, B_1, B_2, C & D. Iron, Arsenic and Strychnine, Copper and Manganese. Alcohol 38% Proof. Indicated in convalescence, run-down conditions, worries, pregnancy and Child-birth. Issued in 10 oz and 16 oz bottle.

BDASOKA
with Hormones
The Sure Uterine Tonic

Contains Asoka, Arjun and Lodh, Hydrastis, Hyocyamus, Bromides, Valerian, Vegetable Laxative, Hormones of Ovary, Thyroid and Anterior Pituitory, Alcohol 19% Prof.

BDFEROL
The Certain Antianemic

Liver extract for oral use. Each amp. contains extract of 8 ounces of raw liver. Issued in Box of 10 Amps. of 7·5 c.c.

BDVIRIL
The Rapid Energiser

A glandular compound with suitable adjuncts for sexual neurasthenia, impotency and senile weakness.
Box of 5 Amps. of 2½ c.c.
Box of 10 Amps. 2½ c.c.

BDCHIN
The Ideal Antimalarial

A combination of cinchona alkaloids with organic iron, arsenic and strychnine. The surest remedy for all kinds of Malaria.
Box of 10 Amps. of 1 c.c.
Box of 10 Amps. 2 c.c.

THE BENGAL DRUG HOUSE LTD.,
22, STRAND ROAD, CALCUTTA.

Journal of the Indian Medical Association

VOL. XV, No. 1 CALCUTTA OCTOBER, 1945

GASTRIC ACIDITY IN OROGENITAL SYNDROME

K. MITRA, M.B.E., M.B., D.P.H. (CAL.), D.T.M. & H. (LOND.)
AND
N. P. VARMA, CAPT., I.A.M.C.,
(From the Nutrition Scheme, Bihar, Bankipur, Patna)

INTRODUCTION

Ample evidence is available in literature to prove that a clinical manifestation associated with angular stomatitis, glossitis and scrotal dermatitis (often referred to as orogenital syndrome) can be caused by the lack of some of the complexes of vitamin B_2 in man. It has been fully described in a previous communication from this laboratory (Mitra, 1943). But how this deficiency is caused has not yet been satisfactorily understood. Sydenstricker (1941) who has done a large amount of work on this subject suggested that avitaminosis of this nature may be caused by prolonged failure of absorption or utilization of vitamins of the B group even when adequate amounts are ingested and that 'gastric achlorhydria seems to be particularly potent in preventing the extraction of vitamins from the natural sources in food'. In the present investigation an attempt has been made to assess the acidity of gastric contents in such cases by the method of fractional analysis, in order to observe whether lack of acid response is in any way responsible for the causation of this particular clinical syndrome.

MATERIAL FOR STUDY

Altogether 64 male subjects suffering from clinically demonstrable manifestation of the orogenital syndrome only were chosen for the enquiry. They were otherwise healthy.

Of these 12 persons were between 10 and 15 years, 13 persons above 15 and upto 20 years, 21 persons above 20 and upto 30 years, 15 persons above 30 and upto 40 years and only 3 persons were in the age group above 40 but upto 50 years (*vide* Table I).

TABLE I—SHOWING THE AGE DISTRIBUTION OF 64 SUBJECTS

Age groups	*No. of subjects*
Between 10 and 15 years ..	.. 12
Above 15 and upto 20 years ..	.. 13
Above 20 and upto 30 years ..	.. 21
Above 30 and upto 40 years ..	.. 15
Above 40 and upto 50 years ..	.. 3
TOTAL	.. 64

Thirty of these subjects were suffering from the complete syndrome *i.e.* the labial, lingual and scrotal lesions; another thirty one were suffering from angular stomatitis and glossitis only. Out of the remaining three subjects two were suffering from glossitis only and one from angular stomatitis and scrotal dermatitis. (Table II).

TABLE II—SHOWING THE TYPES OF LESION IN 64 SUBJECTS

Types of lesion	*No. of subjects*
Complete Syndrome—labial, lingual & scrotal lesions	.. 30
Angular stomatitis & glossitis only	.. 31
Glossitis only	.. 2
Angular stomatitis & scrotal dermatitis	.. 1
TOTAL	.. 64

METHOD OF STUDY

The subjects were given a light meal at about 8 P.M. the night before and kept fasting till the investigations for fractional analysis of gastric acidity were started the following morning between 8-30 and 9 A.M. After the fasting juice was taken out through Ryle's gastro-duodenal tube by means of an all glass syringe, the subjects were given a drink of barley gruel, about 1 pint in quantity, without removing the tube.

FINDINGS

Table III given below summarises the data obtained from the gastric analysis. Fifteen minutes after the gruel feed about 10 c.c. of gastric juice was aspirated out through the Ryle's tube and the acidity of the sample was determined. This procedure was repeated at intervals of 15 minute periods till 10 aspirations were completed or the fluid inside the stomach was exhausted, whichever was earlier. The emptying time of the stomach in no case was found to be less than 2 hours and with the exception of 5 subjects the tenth sample could be obtained in all cases. Out of these five the 9th. sample could not be obtained in one subject only. The free and total acidity were determined in terms of N/10 acid per 100 c.c. of the juice as in the case of fasting juice by titration with N/10 NaOH but the figures for free acidity only have

TABLE III—SHOWING FREQUENCY DISTRIBUTION OF QUANTITY AND ACIDITY OF FASTING JUICE

Class Interval	*Quantity*		*Free Acidity (N/10 acid per 100 c.c. of the juice)*	
	Actual number	% age incidence	Actual number	% age incidence
0 c.c.	6	9·4	15	23·4
Upto 10 c.c.	10	15·6	7	10·9
„ 20 c.c.	10	15·6	14	21·9
„ 30 c.c.	15	23·4	18	28·1
„ 40 c.c.	7	10·9	7	10·9
„ 50 c.c.	6	9·4	3	4·7
„ 60 c.c.	6	9·4	—	—
„ 70 c.c.	4	6·3	—	—

XUM

been given in Table IV. The last column in the table gives the number of subjects in whom achlorhydria was present during each examination of gastric juice after the administration of gruel meal. The maximum, minimum, mean and standard deviation figures of the whole group in each of the ten subsequent samples have been shown in Table IV.

TABLE IV—SHOWING FREE ACIDITY IN SUBSEQUENT SAMPLES

Sample Number	Free acidity (decinormal acid in 100 c.c. of the juice) Maximum	Minimum	Mean	S.D.	No. of cases with no acid
After ¼ hr.	33·0	0·0	4·1	5·4	41
„ ½ hr.	49·0	0·0	9·7	9·6	21
„ ¾ hr.	64·0	0·0	18·2	14·4	7
„ 1 hr.	81·0	0·0	28·4	18·4	2
„ 1¼ hr.	90·0	0·0	34·6	17·6	1
„ 1½ hr.	100·0	0·0	39·2	20·9	1
„ 1¾ hr.	100·0	0·0	38·5	20·0	3
„ 2 hr.	107·0	0·0	36·2	21·5	3
„ 2¼ hr.	79·0	0·0	29·7	17·6	5
„ 2½ hr.	53·0	0·0	20·7	12·6	4

It will be apparent from above that six subjects did not have any fasting juice at all and the maximum quantity of juice was found to be 69 c.c. The average quantity was found to be 21·8 c.c. with a standard deviation of ± 18·3 c.c. In other words, the quantity of fasting juice in the group examined was found to be extremely variable. The free and total acidity were determined by titration of aliquot portions of filtered juice with decinormal caustic soda solution using Toffer's methyl-yellow and phenophthalein respectively as indicators and have been expressed in terms of N/10 acid present per 100 c.c. of the (juice) samples (Cole, 1941). The total acidity was very often about 10 c.c. higher than the respective free acidity figure and in a few cases the difference was about 11 c.c. to 12 c.c. The figures for total acidity have not been included in the text, for various reasons. In eleven subjects free acid was absent in the fasting juice and in another four subjects the quantity of fasting juice was found to be less than 3 c.c. and therefore the acidity could not be determined.

DISCUSSION

Attempts have been made from time to time by workers in different parts of India to arrive at standard figures for fractional acidity curve in response to test meals on apparently healthy subjects and also on hospital patients but due to paucity of data, the "norm" has not been satisfactorily established. In spite of this disability, however, some amount of logical inferences may be drawn by comparing the findings in the present enquiry with those of the previous ones recorded by other workers.

Resting juice—The quantity of the juice is probably of no material importance as it varies from day to day (Srikantia *et al*, 1944). This has been the experience in the present investigation also, as in eight of the subjects the fasting juice taken on alternate days was found to vary in quantity. The acidity of the juice was found to be extremely variable and confirms the findings of previous workers with normal subject.

Subsequent samples—A close study of the maximum, minimum and mean figures and the standard deviation of the respective means (Table IV) fails to reveal any significant difference from the figures recorded by other workers referred to, in this paper.

In Table V collation of certain important indexes from the findings of other workers have been made for the purpose of comparative study. A careful examination of the table does not carry conviction that the subjects suffering from orogenital syndrome, but otherwise healthy, suffered from any perceptible lack of gastric acidity, as compared to apparently healthy subjects investigated in other parts of India.

The frequency distribution of maximum free acidity in different class intervals of 10 c.c. of N/10 acid in the ascending scale may also be used as an index for comparative purposes. Such figures for healthy subjects are available in Rao's paper (*loc. cit*) and that of Srikantia *et al* (*loc. cit*). It appears from Table VI that in the present series a maximum acidity of more than 60 c.c. was noticed in no less than 22 per cent of the cases, whereas the corresponding percentages in the two other series under comparison were 15 and 6 respectively. At the bottom of the scale a maximum acidity of not more than 20 c.c. were noticed in about 12 per cent of the cases whereas in the other two series the respective figures were 30 and 10 respectively. Whatever the inference may be it is certain that the subjects in the present series did not suffer from any lack of acid response.

Another striking feature of the free acid curve is, the delayed acidic response of the stomach. Whether this is apparent or real is still to be determined. In 62·5 per cent of the subjects, free acid was absent in the first sample and in about 33 per cent of the cases free acid was absent in the second sample and in 10 per cent free acid was absent even in the third sample *i.e.*, even 45 minutes after the gruel feed.

TABLE V—SHOWING FREE ACID RESPONSE AFTER GRUEL MEAL

	(a) Napier & Das Gupta	(b)	Rao M. N.	Manglik et al[1]	Srikantia et al	Present series*
Maximum figures for acid recorded in c.c. ..	90	110	86[2]	96	94	107
Highest value in mean acidity curve	42·1	34·2	42	33·4	32·5	39·2
Time of peak in the curve in minutes after gruel feed ..	75	75	120[3]	75	120	105
%age of cases with achlorhydria	nil	2·3	5·0	Not recorded	nil	1·6

* Figures for male subjects only.
[1] Figures for barley gruel feed only.
[2] Excluded the figures for secondary rise in acidity.
[3] Secondary rise.

Two of the subjects who did not exhibit free acidity even in the fourth sample together with another case, which showed acidity in the fourth sample only were probably the worst cases in the group from the clinical point of view.

Manglik *et al* (*loc. cit*) reports that in their series of apparently healthy subjects only 48 per cent did not exhibit free acidity at the end of 15 minutes after gruel meal. These authors further quote unpublished work of Bhatt and Gupta, (post-graduate students working for their M.D. theses of Lucknow University); they also found quite independently of each other that 36 per cent of their cases did not exhibit free acidity even at the end of half an hour after the gruel feed. The corresponding figures of 33 per cent in the present series seems to be no different from the above findings except

TABLE VI—SHOWING FREQUENCY DISTRIBUTION OF MAXIMUM FREE ACIDITY IN SUBSEQUENT SAMPLES

Magnitude of class interval N/10 acid	*Present authors* actual (64)	% age	*Rao M.N.* actual (100)	% age	*Srikantia et al** actual (80)	% age
0—10 c.c.	1	1·6	12	12·0	1	1·2
Upto 20 c.c.	7	10·9	18	18·0	7	8·8
„ 30 c.c.	8	12·5	17	17·0	24	30·0
„ 40 c.c.	5	7·8	17	17·0	17	21·2
„ 50 c.c.	11	17·2	13	13·0	15	18·8
„ 60 c.c.	18	28·1	8	8·0	11	13·8
„ 70 c.c.	7	10·9	8	8·0	1	1·2
„ 80 c.c.	3	4·7	5	5·0	1	1·2
„ 90 c.c.	1	1·6	2	2·0	2	2·5
„ 100 c.c.	2	3·2	—	—	1	1·2
„ 110 c.c.	1	1·6	—	—	—	—

* Slightly different type of class intervals have been adopted, *e.g.*, 0-9, 10-19, etc.

that there was a suggestion of delayed response (62·5 per cent against 48 per cent) at the end of first 15 minutes of the present series as compared to the experience of Manglik *et al* with their gruel meal cases. In the present series, the peak of the mean acid curve was arrived at after 1½ hours and does not compare unfavourably with the corresponding findings of others. Whereas if the figures comprising the mean curve be analysed it is found that the maximum acidity was reached in

5 cases (7·8%) after 1 hour,
10 cases (15·6%) after 1¼ hours,
15 cases (23·4%) after 1½ hours,
13 cases (20·3%) after 1¾ hours,
and in 9 cases (14·2%) after 2¼ hours.

Manglik *et al* reports that in their series with alcohol test meal the peak in the acid curve was obtained in 78 per cent of the cases at the end of 1½ hours.

Napier *et al* (1938) have suggested an index to classify the cases into hypo-, iso-, and hyper-chlorhydriacs. Srikantia *et al* (*loc. cit*) have followed this arbitrary scale and have classified their apparently healthy cases accordingly. Date on this particular feature of acid response in healthy subjects are absent in the published record of other workers. Only 1·6 per cent of the cases in the present series were found to be suffering from achlorhydria. This could not be

TABLE VII—SHOWING CLASSIFICATION OF MAXIMUM FREE ACID RESPONSE ON THE LINES SUGGESTED BY NAPIER ET AL (1938)

	Present Authors No. of men	% age	*Srikantia et al* No. of men	% age
Achlorhydria 0 c.c. ..	1	1·6	nil	0·0
Hypochlorhydria (below 10 c.c.) ..	nil	0·0	1	1·2
Isochlorhydria Low (10-25 c.c.) ..	11	17·2	17	21·2
Medium (upto 45 c.c.) ..	18	28·1	39	48·8
High (upto 65 c.c.) ..	24	37·5	19	23·8
Hyperchlorhyria (over 85 c.c.) ..	10	15·6	4	5·0

confirmed by histamin owing to absence of facilities. 17·2 per cent of the subjects were found to be of 'low' type, 28·1 per cent of 'medium' type and 37·5 per cent of 'high' type of isochlorhydria and only 15·6 per cent of the subjects were found to be suffering from hyperchlorhydria and one from hypochlorhydria. As compared to the findings of Srikantia *et al*, the present series of cases seem to possess slightly higher acidic response. Unless the gaps about the 'norms' of acidic responses are more fully worked out it seems to be difficult to draw precise conclusion on the present findings. But the evidence adduced in the present enquiry does not support the hypothesis that orogenital syndrome is often associated with gastric achlorohydria in spite of feeble acid response noticed in three of the clinically severe cases in the series.

SUMMARY

Gastric response in 64 otherwise healthy subjects but suffering from orogenital syndrome has been studied and the results of the investigation have been discussed. On the evidence available it was difficult to conclude that the subjects suffered from any abnormal lack of gastric acidity though in three of the clinically bad subjects the acid response to meal was feeble.

ACKNOWLEDGMENTS

The authors take this opportunity to thank their former Chief, Rai Bahadur Dr. B. P. Mozoomdar, for his interest in the work and encouragement. Thanks are also due to Capt. A. N. Banerjee, former Civil Surgeon of Singhbhum and Mr. Jwala Prasad Pandey, Headmaster of Jagnathpur H. E. School for their helpful assistance during the enquiry.

REFERENCES

BHATIA, S. L., PATEL, H. S. AND DUNDAS, J. D.—*Indian J. M. Research*, **19**:259, 1931.
COLE, S. W.—Practical Physiological Chemistry, 9th Edition (reprinted). W. Heffer & Sons, Cambridge, 1941.
Lancet—Leading article, **1**:232, 1942.
MANGLIK, V. S., GOEL, M. P. AND MANGLIK, H.—*Indian J. M. Research*, **30**:351, 1942.
MITRA, K.—*Indian M. Gaz.*, **78**:330, 1943.
NAPIER, L. E. AND DAS GUPTA, C. R.—*Indian J. M. Research*, **23**:455, 1935.
NAPIER, L. E., CHOWDHURY, R. N. AND CHOWDHURY, M. N.—*Indian M. Gaz.*, **73**:65, 1938.
RAO M. N.—*Indian J. M. Research*, **24**:1145, 1937.
SRIKANTIA, C., HIRIYANNIYA, S. AND KATIENGAR, N. L.—*Proc. Indian Acad. Sci.*, **20**:245, 1944.
SYDENSTRICKER—*Ann. Int. Med.*, **14**:1499, 141.

XUM

PRELIMINARY INVESTIGATIONS ON THE SPREADING PROPERTIES OF CEREBROSPINAL FLUID*

M. V. GOVINDASWAMY,†
K. S. GURURAJADOSS‡
AND
M. A. ASWATHA NARAYANA RAO||

The study of the cerebrospinal fluid is of the greatest interest since results of great diagnostic value can be expected from such studies. The fluid from a healthy individual consists of a colourless crystal clear liquid containing proteins in aqueous solution. The main proteins present are albumins and globulins. In certain pathological conditions, the protein metabolism is upset and the nature and proportion of the proteins present may change very widely. The ultimate analysis of the fluid may not vary much to be of any practical value. A complete chemical analysis involving characterisation, separation and estimation of the different proteins may be of great value; but the methods involved are so specialised and difficult that they are not likely to be of practical interest at present. Physico-chemical investigations of such body fluids on the other hand have great potentialities and results of great importance have already been achieved. This test, which depends upon the behaviour of the different proteins present in the cerebrospinal fluid on the aggregation of colloidal gold particles, is found to be not merely confirmatory of other tests, but is of particular assistance in the diagnosis of early stages of tabes and general paresis.

The present work arose when one of us (K.S.G.D.) was working out a simpler alternative for the Lunge test *i.e.*, by substituting congo-rubin solution in place of gold solution.

Proteins are known to spread on aqueous substrates to form unimolecular films. Different proteins exhibit different behaviour with reference to this property. Some proteins like egg albumin and wheat gliadin can be spread by sprinkling the solid on aqueous substrates. Some others like casein have to be spread from their aqueous solution. There are still others which have not been spread at all so far. The thickness of the films also vary enormously with the different proteins. The extent of spreading is moreover differently affected (as shown by one of us) by changes in the composition of the substrates (such as pH, salt content, presence of substances such as formaldehyde, sulphosalicylic acid, trichloroacetic acid, metaphosphates etc. which intereact with the proteins), with the different proteins[2] (Rao and others). The pretreatment of the spreading solution (such as heating, admixture with alcohol) also have a differential influence. This fluid therefore affords a wide field for study and is likely to yield results of great value in the diagnosis of diseases.

Though a considerable amount of work has been done on cerebrospinal fluids on the one hand and spreading of proteins on the other, no work has so far been published on the spreading of cerebrospinal fluid. The present work forms a prelminary investigation which was carried out at the Central College in close collaboration with the Superintendent, Mental Hospital, Bangalore.

Experimental Method

Two samples of cerebrospinal fluid, one from a healthy individual and another from a syphilitic patient, were taken and the spreading property was studied using a modified Langmuir technique developed in the Central College Laboratory and the film formed investigated in a film balance improvised in the laboratory. First the experiments were conducted spreading the fluids on water. The two fluids showed no significant difference in the extent of spreading. When the samples were spread on 0·01 N-HCl, however, very large difference was noticed, the pathological fluid exhibiting a three hundred per cent increase in the spreading power over the normal fluid.

This amazing result was very encouraging indeed and we planned an elaborate scheme of research, but we could not carry out the same as two of us left the Central College before implementing the plan. So the investigation is at present in its absolutely preliminary stage. An extension investigation with a large number of subjects is necessary before one can say that this remarkable finding is a general one or that it is characteristic of the particular pathological condition. As it was felt that there was no prospect of our resuming the investigation, we considered it our duty to throw open the problem and bring it to the notice of the conference, so that those who are more favourably situated may take up this fertile field of research which has very great potentialities indeed from the point of view of diagnosis of pathological conditions involving the upsetting of protein metabolism.

Acknowledgment

The authors wish to record their thanks to Prof. B. Sanjiva Rao for the facilities provided.

References

Rao, G. N. S., Doss, K. S. G. and Rao, B. S.—Surface Behaviour of Proteins. To be shortly published.

* Read at the Scientific Section, XXI All-India Medical Conference, Cawnpore, December, 1944.

† Superintendent, Mental Hospital, Bangalore.
‡ Physical Chemist, Imperial Institute of Sugar Technology, Cawnpore.
|| Lecturer in Colloid Chemistry, Indian Institute of Science, Bangalore.

CALCIUM AND COAGULATION DEFECTS

D. V. SUBBA REDDI, M.B.B.S.
Andhra Medical College, Vizagapatam

Any one interested in the study of physiological problems relating to blood coagulation, will be struck by the numerous and sometimes meaningless or harmful procedures, attempted by practitioners to arrest hæmorrhages of varying degrees and the more ridiculous attempts to prevent tendency to bleeding by administering certain drugs, reputed to be prophylatics against bleeding.

Of these numerous drugs and methods of administration, nothing seems to be more fashionable and wasteful than the use of calcium by mouth, for days and weeks, to stop bleeding of various types and from different sources and to inject intramuscularly or intravenously preparations of calcium with the aim of stopping bleeding from any source.

It is worthwhile to take statistics in the city hospitals and bigger district hospitals to see how much of calcium, in some form or other, is being prescribed as prophylactic and curative agent in cases of bleeding, suspected or patent. And the use and wastage seems to be growing enormously on account of the harmless nature of the drug, by mouth or by injection. This is helped by the number of forms available and the enterprise, advertisement of the manufacturing firms.

There was a time when the role of calcium in coagulation was not suspected. Early studies recognized the relationship of calcium in coagulation (Howell, 1935). The effect of minor or slight alterations in the level of blood calcium was not known. There are no grounds for the tradition or belief that low blood calcium is the cause of increased coagulation time. On the other hand, there are animal and clinical investigations which tend to prove the contrary. Ravdin and others (1930) studied a series of dogs with serum calcium values of 4 to 8 mgm per 100 c.c. and found no evidence of prolongation of clotting time. Ravdin and co-workers (*loc cit*) also report a patient with parathyroid tetany and serum calcium of 4·6 mgm per cent but normal coagulation time.

One case reported by Snyder (1934) deserves special notice. It was a patient with nutritional anæmia with hæmorrhagic disease. Blood calcium was low and the bleeding tendency was attributed to hypocalcæmia. To-day. one would estimate the prothrombin time in such a case and attribute the deficiency to hypoprothrombinæmia due to multiple vitamin deficiency, including that of vitamin K.

A similar explanation is more acceptable to-day even for the cases of obstructive jaundice, with a hæmorrhagic tendency. It was thought that a deficiency of calcium was responsible for the bleeding in cases of jaundice. Now, the explanation is simple and unequivocal. The cause of bleeding in these cases is also hypoprothrombinæmia due to lack of absorption of vitamin K in jaundice.

The definite relation between calcium concentration and the coagulation time of blood has been carefully investigated by Crane and Sanford (1937). They set themselves two questions: (1) the amount of calcium necessary for normal coagulation, (2) the effect of variation in total calcium concentration upon coagulation time.

Blood was drawn from normal adults into chilled oil syringes and transferred immediately into paraffined tubes standing in ice. In another series of paraffined tubes, were placed calcium and saline solutions in proportion to give the desired calcium concentration (from 36·5 mgm per cent to 0·5 mgm per cent). The total amount was 36 drops of constant size. Within ten to fifteen minutes after drawing the blood, four drops of blood of constant size, were transferred to each tube of the calcium mixtures. The tubes were shaken to mix thoroughly and allowed to stand at room temperature for about 15 minutes. After this, each tube was tipped once every minute and the time of coagulation noted. The time of appearance of a firm clot was taken as the coagulation time.

By taking a large series of experiments, the authors secured results which led them to definite conclusions. "Variations between 5 and 20 mgm. per cent in the concentration of calcium have no significant effect upon the coagulation time of blood. Below 5 mg. per cent the coagulation begins to be retarded but it is not until the calcium is reduced to 2·5 mgm per cent or below that differences appear which might be of importance in coagulation time."

These experiments demonstrate, that at least *in vitro,* variation of total calcium between 5 and 20 mgm. per cent has no effect on coagulation time and that prolonged coagulation as observed in hæmorrhagic conditions cannot be the result of a low blood calcium alone.

The older view that the hæmorrhagic tendency was due to hypocalcæmia naturally suggested the prescription or the use of calcium to counteract the deficiency of calcium, and to restore the level of plasma calcium to the higher limit of the normal range. Whether the ingestion or injection of calcium in the form and quantities prescribed and for a few days did really and materially affect the level of calcium and whether there were other factors in absorption and metabolism which interfered with the restoration of normal level do not require any detailed discussion in this note. The aim and object of this brief communication is to draw attention to the rapidly changing concepts in the physiology of coagulation and to question the rationale for the use of calcium in the control and cure of coagulation defects. I want to emphasize the need for a more intelligent study of the recent developments relating to vitamin K and its place in the prevention and cure of the hæmorrhagic tendency, in post-operative cases, in jaundice, in obstetrics and other types of cases.

REFERENCES:

HOWELL—*Physiol. Rev.,* **15**:435, 1935.
RAVDIN AND OTHERS—*Ann. Surg.* **91**:801, 1930.
SNYDER—*J. Kansas M. Soc.,* **35**:289, 1934.
CRANE AND SANFORD—*Am. J. Physiol.,* **118**:703, 1937.

XUM

CORRELATION OF BLOOD SUGAR VALUES WITH GLYCOSURIA AND THEIR RELATION TO TREATMENT

V. R. NAIDU, M.B.B.S., M.S., M.R.C.P. (LOND.), D.T.M. & H. (ENG.), F.A.S.C.P.,
Professor of Pathology, University of Mysore

No diabetic case should be treated being entirely guided by the urinary findings. When such cases are more thoroughly investigated, a great discrepancy is observed between the blood sugar levels and the urinary sugar values.

On going through the records of a large series of cases where simultaneous blood sugar estimations and urine examinations are made, I have found three interesting groups where the two results do not correlate. There is one group in which the patients fully under control on a prescribed line of treatment (diet and insulin) suddenly fail to respond to the routine treatment on the supervention of severe infection. The second group consists of elderly individuals complaining of lassitude and weakness. In them, I found on examination a fasting blood sugar invariably above 220 mg., one of them 260 mg. per cent without glycosuria. The third, rather a small group consists of individuals who have shown glycosuria with low blood sugar levels, hardly manifesting any clinical symptoms.

The blood sugar studies were determined by the Folin-Wu method using the venous blood. The fasting blood sugar estimations were all made in the mornings before breakfast.

Normally the kidney does not allow sugar to pass into the urine till the concentration in the blood exceeds 180 mg. per 100 c.c. This threshold value is not constant but is a factor fluctuating within limits in every individual. The majority of investigators agree that this figure is between 160 to 180 mg. per 100 c.c. of blood. Mason (1918) concludes that the renal threshold is elevated under certain abnormal conditions, *e.g.*, in actue nephritis, in fasting nondiabetics when temperature is elevated, in some chronic diabetics and in some elderly individuals. It is occasionally lowered in mild type of diabetes.

As an illustration of the first group, I may mention the record of a patient 'K' aged 46 years. His fasting blood sugar was 226 mg. per cent and he had a glycosuria of 3 per cent (24 hours' collection) on more or less regulated diet. He was on a daily dosage of 40 units of insulin. In due course he developed an abscess on the thigh with consequent disappearance of sugar in the urine and presence of trace of acetone. He was necessarily on an inadequate insulin therapy, as treatment was based on urinary findings. A week later he was seen by me. His fasting blood sugar at that time was as high as 400 mg. per cent while the urine should trace of sugar. Larger doses of insulin therapy with adequate administration of sulphathiazole soon controlled the course of the disease. The fasting blood sugar was again lowered to 240 mg. in a week with appearance of 1 per cent sugar in the urine. Infection obviously seem to raise temporarily the threshold with consequent decrease in the qutflow of urine sugar. With recovery following, the threshold again dropped down with reappearance of sugar. Similar interesting observations has been made by other workers. We have at present no definite explanation for this.

Rabinowitch (1932) explains the hyperglyæmia by assuming that an insulin destroying enzyme is involved the pus cells destroying the insulin *in vitro*. Trypsin which is produced by the leucocytes may be the cause. There is ample evidence to prove that the raised basal metabolic rate accompanying the associated fever (Dubois, 1927) increase the insulin requirement. Fetzer quoted by Wilder (1940) has further shown that the depletion of glycogen content of the liver accompanying the infection may resemble closely conditions following anæsthesia induced by chloroform and ether where there is loss of insulin activity.

We have similarly no definite explanation for the absence of sugar in the urine. When cystitis is present, it is explainable that the bacteria ferment the sugars in the urine with the resultant negative findings on urinalysis. In absence of cystitis, it devolves that the lesion must be in the glomeruli or in the tubules. Our knowledge of the function of the glomeruli is that of a filter playing only a passive role, the filtration taking place on account of physical force. The physical force has been determined to be the capillary pressure which has been experimentally estimated to be roughly sixty per cent of that of the systolic aortic pressure *viz.* 70-80 mm. Hg. The lesion, therefore, is not in the glomeruli but most likely in the tubules. The selective reabsorption in the tubules is a vital activity and infection necessarily intereferes with this. It has been found that high threshold substances such as glucose, amino acids, bases such as potassium, sodium, calcium are easily affected on account of their high reabsorption. It is not understood what exactly is the nature of the pathological lesion in the tubules in a diabetic consequent to infection. Yardumian and Alpern (1941) suggest that with infection the individuals are so sensitised that all the tubules are functioning and the reabsorption of excess of sugar is more or less complete, hence there is just trace or no sugar in the urine.

Several cases of hyperglycæmia without glycosuria or with just a trace of sugar have been seen by me. Harrison (1937) believes that this condition is not uncommon in long-standing mild diabetics and in obese individuals. My cases are all in elderly individuals above sixty. Sindoni (1937) has made similar observations. He explains this on the assumption that certain patients may have tubular mechanisms so perfected that the tubules are able to reabsorb the excess sugar without any definite or latent effect on the body. According to other investigators these patients are supposed to have gradually built up a tolerance for high blood sugars. These cases respond well to small doses of insulin and the blood sugar level gradually decreases with or without the appearance of sugar in the urine.

The third group consists of individuals who have shown glycosuria with low blood sugar levels. They hardly manifest any symptoms of diabetes. This group resembles in some respects the classical glycosuria, but on a follow up, I found them to react clinically as true diabetics. They developed

symptoms of diabetes several months later. Wilder (*loc. cit.*) has observed such pseudo-renal glycosurics develop diabetes within three years, and consequently fixed arbitrarily a period of three years as a deciding factor from true renal glycosuria. One of my cases was an individual of 35 years who generally passed around 1 per cent sugar in twentyfour hours' sample of urine. The glycosuria was recognised, while being examined for insurance. On three consecutive occasions, I found his fasting blood sugar never above 100 mg. per cent and the tolerance curve closely follow the normal curve. In none of my cases in this group I could trace a close familial incidence as reported by Wilder (*loc. cit.*), Joslin (1937) and others.

Discussion

In the treatment of a diabetic individual it is but essential that urine and blood examination be made simultanously and the results coordinated. In mild diabetics daily urine examination alone is sufficient to guide the treatment. A fasting blood sugar estimation may be carried out once in three months. If the threshold is low as in my third group of cases, blood sugar estimations have to be made more frequently. By this means renal glycosuria could be excluded. Generally such threshold values are met with in early cases of diabetes. They are accidentally discovered and most of them develop diabetes one or two years later.

If the threshold is raised and the urine should contain no sugar as in my second group of cases, blood analysis has to be made more frequently. The main purpose of treatment is to maintain the blood sugar levels near about normal during the course of twenty four hours with or without insulin.

Authorities like Joslin (*loc. cit.*), Wilder (*loc. cit.*), Williams (1923) and Woodyatt (1921) seem to agree that the clinical condition of the patients should be the guiding factor than the blood sugar levels. On the other hand Banting quoted by Best and Taylor (1937) and a great many clinical pathologists are of opinion that the blood sugar level should be maintained within the normal limits either with diet or combined with insulin.

Repeated blood sugar studies on diabetics at different intervals have shown that it is not easy to maintain the blood sugar level wihin the normal range, unless it is a mild case. With increasing severity of the diabetes, it is more and more difficult to obtain a normal blood sugar at the end of the night's rest, unless a dose of insulin is administered late in the evening or during the night. The latter is not practicable in the majority of cases.

From the above one will not deny the fact that frequent blood and urine examinations in a declared or a suspected diabetic is essential. Though we are aware that the urine results collected at any period does not by any means correctly reflect the level of the blood sugar at that time yet, we have at present no other better method than rely on the reading of the urine and blood sugar taken at the prescribed hour. Further we are aware also of a great many factors known to influence the presence of sugar in the urine. It is known that highly concentrated urine, emotional disturbances, skull injuries and certain sugars besides glucose, for example lactose in a lactating woman, all show presence of sugar in urine. In fact a survey made in 1930 by Joslin (*loc cit.*) of 9000 patients who had come for diagnosis or treatment of diabetes showed that 15·8 per cent had glycosuria of a nondiabetic type as shown by determinations of the blood sugar. All these facts further confirm the necessity of correlation of the two readings, *viz.* the urine sugar and the blood sugar.

In mild diabetes, it is generally not difficult to keep the blood sugar level within the normal range (100-160 mg.) with restricted diet alone. In moderately severe cases, the levels may be allowed to fluctuate between 100-180 mg. per cent by dieting and insulin. In severe cases however it is more or less difficult to maintain the blood sugar level without allowing a fluctuation beyond the threshold inspite of dieting and insulin.

When infection, pyogenic or otherwise supervenes in a diabetic, it is imperative on the part of the physician to get frequent blood sugars estimated and arrange the line of treatment on the results of the blood sugars than on glycosuria. With efficient treatment, the sugar levels gradually lower with the appearance of small quantities of sugar in the urine.

There are occasionally a few instances of glycosuria with low blood sugar levels resembling in many respects the renal glycosuria. They need observation.

Summary

1. Three types of diabetics are reported in whom the blood sugar and glycosuric readings are not coordinated.

2. Pyogenic infection of the urinary tract reduces the sugar content of the urine by combustion, giving a false negative urine.

3. Any form of infection outside the urinary tract, alters the renal threshold with a tendency to hyperglycæmia. As the offending conditions subside, the threshold drops.

4. The practical bearing of these observations is that we should not depend on urinary findings alone in the diagnosis and treatment of diabetics especially when there are supervening infections.

5. Excretion of sugar in the urine occasionally may be erroneously regarded as early diabetes.

6. Conversely early diabetes may be regarded as benign glycosuria. The mistake may be rectified in either case by correlating the blood and urinary findings.

References

Best and Taylor—The Physiological Basis of Medical Practice. Published by William Wood & Co. 1937.

Campbell, Osgood and Hostin—*Arch. Int. Med.*, **50**:952, 1932.

Dubois, E. F.—Basal Metabolism in Health & Disease. Published by Phil. Lea. & Febiger. 1927.

Harrison, G. A.—Chemical Methods in Clinical Medicine. Published by J. & A. Churchill Ltd., 1937.

Himsworth, H. P.—*Bio-chem. J.*, **25**:1128, 1931.

Joslin, E. P.—Treatment of Diabetes Mellitus. Phil. Lea. & Febiger, 1937.

Mason, E. H.—*Arch. Int. Med.*, **21**:216, 1918.

Rabinowitch, D. M.—*Canad. M. A. J.*, May 1932.

Wilder, R. M.—Clinical Diabetes Mellitus and Hyperinsulinism. Published by Saunders, 1940.

Williams, J. W.—Obstetrics. Published by Appleton & Co. 1923.

Woodyatt, R. T.—*Arch. Int. Med.*, **28**, 1921.

Yardumian, K. and Alpern, A. N.—*Am. J. Clin. Path.* Vol. 2. 1941.

XUM

ON THE INTERPRETATION OF WASSERMANN AND KAHN REACTIONS

S. P. GUPTA, M.D. (MED.), M.D. (PATH.), DIP. BACT. (LOND.),

Lecturer in Pathology, Medical College, Lucknow

Physicians have often noted varying results of Wassermann reaction. Different laboratories may report different results. Even in one laboratory the result on the blood of the same patient may differ at different times and sometimes the same serum sent in two lots has been found to give a different result. A weakly positive result is not quite decisive and a completely negative one does not exclude syphilis. All these facts are very confusing to the practitioner who is not a bacteriologist and with an undesirable passive attitude is apt to leave the mysteries of the serum test to the laboratory worker. Consequently it has become very important that practitioners should be well acquainted with the limitations of the blood test for syphilis so that they may not diagnose or exclude syphilis unjustifiably or, on the other hand, blame the laboratory workers for false positives which are not due to any technical error but to peculiarities of certain sera. The present discussion is meant to clarify the conditions causing false reactions in order to reduce the unnecessary anti-syphilitic treatment or domestic tragedies which may sometimes follow the blood test.

There was a time in the early days of Wassermann and Kahn when serological tests for syphilis were performed in only suspected cases and the simplest interpretation of positive for presence and negative for absence of syphilis was taken for granted. Later, it was realised that it takes about 6 weeks after infection for the test to become positive and that in the latent stage or just after partial treatment it may become negative temporarily. As the test began to be employed as a routine in unselected cases (including pregnancy, donors, and candidates for marriage) and as the sensitivity of the tests for syphilis increased, the list of non-syphilitic conditions liable to give rise to positive reaction has also increased.

The serological tests for syphilis depend on the detection of antibodies in blood serum or other body-fluids and for this purpose Kahn's precipitation test and Wassermann's complement fixation test are commonly employed. Both the tests depend on the antigen-antibody reactions, the antigen being cholesterolised alcoholic extract of heart. In Wassermann reaction the antigen-antibody ratio is such as to give a fine invisible precipitate best suited for complement absorption or fixation. In Kahn's test the antigen-antibody ratio is such as to give a visible precipitate which is most unsuitable for complement fixation. Both the antigens are arbitrarily selected and standardised with the previous ones to get the best results and there is no absolute measure of their constituents and strength. It shows that a W. R. or Kahn reaction can be negative under several conditions. Absence of antibodies in the serum gives negative results. This absence can be due to the absence of infection or delay in the development of antibodies. Ordinarily syphilitic antibodies develop in about six weeks after the infection.

Secondly, a negative result will be obtained if the antibodies do not form a suitable ratio with the fixed quantity of the given antigen. Usually it is the less quantity of antibodies which gives a negative result but theoretically very large amount of antibodies may also lead to the same result as we see in the Zone phenomenon of Widal reactions though it has not been reported by any worker so far. That antigen-antibody ratio is an important factor in W.R. and Kahn reactions is clearly shown by cases which are W.R. positive and Kahn negative or Kahn positive and W.R. negative. The discrepancy between W.R. and Kahn are not due to different antibodies, for absorption with Kahn antigen removes the antibodies for both. According to Berger and Sutherland a negative W.R. in a syphilitic is due to the interfering or complementoid sustances in the serum which are contained in CO_2 insoluble fraction.

Thirdly, a negative W.R. result is obtained if the fixability or adsorbability of the complement is low. The low fixability cannot be detected if strongly positive sera are used as positive controls. This difficulty can be avoided by using positive controls of ++− or ++± obtained by titration and dilution of positive pooled sera as suggested by Greval. This is one of the factors which leads to a positive result by one laboratory and weakly positive or negative by another.

Similarly. theoretical considerations show that a positive result can be obtained under several conditions. Presence of antibodies is the most important condition. Presence of antibodies usually indicates infection. It would be useful to remember that these antibodies may have been passively transferred as in a new born baby or after blood or serum transfusions. And in some cases the antibodies may be present long after the infection has died out as a result of adequate treatment. Under these circumstances W.R. and Kahn test will be positive in the absence of any syphilitic infection.

We know that antigens are chemical substances and one antigen in addition to others may be present in different infecting agents. The common antigen will produce common antibody. The same antigen antibody reaction will be observed in widely different conditions. W.R. can become positive in widely different diseases. For example a positive W.R. has been reported in:—

(*a*) Yaws, trypanosomiasis, leprosy, Pinta and Bejal.

(*b*) Typhus, eosinophil lung or lecithinophil eosinophilia, and kala-azar and malaria.

(*c*) Septicæmia, endocarditis, tuberculosis, relapsing fever, scarlet fever, infectious mononucleosis.

(*d*) Jaundice, pernicious anæmia and leukæmia and lecithinophil gastro-hepato-intestinal syndrome.

(*e*) Virus diseases like vaccinia, influenza and lymphopathia venereum.

In most of these conditions the test becomes negative when the condition passes off. It would be advantageous to examine a blood film in all cases of positive

Wassermann reaction. It will detect several of the above mentioned conditions like malaria, kala-azar, pneumonia, mononucleosis, pernicious anaemia, leukaemia and eosinophilia. The last conditions of high eosinophilia is very interesting for it not only produces a positive W.R. but simulates clinically and radiologically an early tuberculous condition. In this condition Kahn is usually negative. Fortunately the treatment for both high eosinophilia and syphilis is with arsenic injections. In two of my cases eosinophilia was associated with both positive W.R. and Kahn and in these cases it is difficult to exclude an associated syphilitic condition.

The alcoholic extract of heart contains several antigens and the serum from a non-syphilitic patient can contain large number of antibodies. Some of these antigens and their corresponding antibodies may be in sufficient amount to produce a precipitate in Kahn test or to remove the complement in Wassermann reaction. We know that there are falsely positive W.R. and Kahn tests. The falsely positive W.R. becomes negative after a few months or so.

The falsely positive Kahn test is due to the interaction of these chemical substances present in the antigen and serum. Kahn distinguishes two types of reactions—syphilitic and general biologic. The syphilitic reaction is intensified at 37°C and lessened in intensity at 1°C while for the general biologic reaction the reverse holds good. Hence it is advisable to record the results of positive Kahn at 37°C.

In the absence of syphilitic antibodies a visible precipitate or invisible precipitate removing complement can occur under other varying conditions. Contaminated sera usually show a granular precipitate and are unsuitable for Kahn test. In W.R. such contaminated sera remove sufficient complement alone in the control tube and are called anticomplementary sera. So long there is a visible precipitate and is anticomplementary there is no trouble, for the serum can be discarded and the test repeated with fresh serum. But if the precipitate in a contaminated serum is of the invisible type it is accentuated in the Kahn and W.R. test to give a positive result. Hence contamination of the serum is one of the important factors in giving the so called sometimes positive and sometime negative results. Once I received two capsules of serum from an out-station case. I tested the ampoules separately. One was positive and other was negative. The positive one appeared to be contaminated. Excess of chyle in serum is likely to produce a positive result in W.R. and a negative one in Kahn test. Hence it is always advisable to collect blood for W.R. and Kahn when the patient is fasting. Test should be performed as soon as possible after collecting the serum. Sera which have been kept for sometime show a progressively weaker reaction especially in Kahn test. This is probably due to gradual denaturation of proteins.

Which of the two tests is better? Wassermann reaction is older in age. Kahn at one time claimed better results. The conference of serologists at Copenhagen in 1928 decided that both the tests are generally satisfactory. Though many workers prefer Kahn on account of its simple technique, and equal reliability, it has not been able to replace the Wassermann reaction which is still extensively used. Several English workers and Greval who has contributed a lot to the technique of Wassermann reaction are more in favour of Wassermann reaction than Kahn. Hence good many workers including myself are of opinion that in every case both Wassermann and Kahn reactions should be performed. The clinical history is equally important and should always be communicated to the pathologist so that if the test result differs with clinical findings he may repeat the test before giving the report. The pathologist should be provided with at least 2 c.c. of serum free from hæmolysis and chyle and collected aseptically. In short, the clinician and the pathologist should collaborate in interpreting the result based on W.R. and Kahn test and the clinical findings. Based on these three factors the result should be reported as positive, negative, or doubtful, and not as one plus and so on, for the clinician is more interested to know if he should or should not give the anti-syphilitic treatment than to know even if his patient is syphilitic or non-syphilitic.

With all the three factors positive, doubtful or negative there is no difficulty in interpretation. As a working rule it is advisable to give antisyphilitic treatment when two of the factors are positive. When only W.R. or Kahn is positive in the absence of a clinical history the result should be considered doubtful. The tests should be repeated after an interval of about 3 to 6 months to get further information. It may be difficult to wait in cases of pregnancy. Useful information may be obtained by testing husband's blood. Pregnancy itself has a tendency to produce falsely positive W.R. In weakly positive reactions the practice of testing after a provocative dose has been followed. Greval does not favour the provocative dose which is as likely to accentuate a false reaction as a true one. According to him clinical scrutiny and repetition of the reaction after the subsidence of the passing morbid state is more likely to help. Becker's remarks are interesting when he says, "One positive test will usually convict a labourer over his denial, two may indict a railroad president or a banker, but I have known three to be insufficient to satisfy the clinician of the guilt of a minister. Though the treatment is withheld in doubtful or weakly positive reactions they should always suggest to the clinician the need for a thorough examination of cardiovascular and nervous systems for it is in these cases that persistently weakly positive reactions are found.

If is hoped that as the above mentioned fact and limitations become known the clinicians will take active interest in the interpretation of laboratory tests for syphilis, and there will be less tendency to condemn the test as unreliable and blame the pathologist for false reports.

REFERENCES

BERGER AND SUTHERLAND—*J. Path. & Bact.*, **56**:237, 1944.
GREVAL, S. D. S.—*Indian M. Gaz.*, **78**:583, 1944.
British Encyclopedia of Medical Practice Medical Progress (1944) p. 102.

BLOOD MATCHING FOR TRANSFUSION

NIRMAL CHANDRA BANERJI, M.B., B.S., P.M.S.,
M.O. I/C., Processing Laboratory, Blood Bank, Lucknow

Blood matching for blood transfusion is of primary importance. Blood transfusion is an operation which may be fatal if full precautions for safety have not been taken. Short cuts in testing for group and matching bloods fall short of full precautions, and this should not and cannot be permitted. However, as Wiener (1939) remarks, "It is fortunate that the transfusion of incompatible blood is not always fatal; indeed in a number of instances the reactions were so mild or insidious that they passed unnoticed or were attributed to other causes." This should not, however, make one have a complacent attitude towards this therapy.

The main basis of this compatibility or otherwise is the same as the blood groups *i.e.* the agglutinogen in the red blood cells and the agglutinin content of the serum. The international nomenclature *i.e.* the ABO system is based on this rationale and it is an improvement in the right direction compared to Moss and Jansky's classification I, II, III and IV. It is time the workers get used to this, as this will prevent a great amount of confusion which otherwise may be present. For a proper understanding a comparative chart is given:—

Groups			*Corpuscles*	*Serum*
Int.	Moss	Jansky		
AB	I	IV	Agglutinogen A & B.	No agglutinin
A	II	II	Agglutinogen A.	Agglutinin β
B	III	III	Agglutinogen B.	Agglutinin α
O	IV	I	No agglutinogen.	Agglutinin $\alpha+\beta$

It is only when agglutinogen A comes in contact with its corresponding agglutinin α (anti-A) that clumping or agglutination takes place, similar is the case with B and β (anti-B). It being a bilological axiom that homologous agglutinogen and agglutinin cannot exist together in the same blood.

As the compatibility depends upon the presence or absence of the agglutinogens and their corresponding agglutinins, *the best compatible blood is a blood of the same group.* Here the corpuscle of the donor as well as the recipient is not meeting its corresponding agglutinin. And naturally one must try to obtain a donor of the same group, as far as possible, and not run for a so-called 'Universal Donor *i.e.* Group 'O' donor. It must be appreciated that the latter does not satisfy all the conditions of compatibility, as is discussed below, in comparison with a donor of the same group, though it may be the second best choice.

Universal Donor and Recipient

When we have to find a compatible donor of a group other than that of the patient, the question of universal donors and universal recipients crop up. The absence of A & B agglutinogens in the red blood cells of 'O' group blood, leaves nothing in the red blood cells to be clumped by the agglutinin (α or β) contents of the recipients serum. Absence of α & β agglutinins in the 'AB' group blood is responsible for there being no clumping of A or B agglutinogens if present in the donor's red blood cells. This is the basis of calling 'O' group as universal donors and 'AB' group as universal recipients

But it must be appreciated that no account of the possible agglutination of the recipient's corpuscles by the donor's plasma has been taken. In actual practice the chance of such a reaction is almost negligible, owing not only to the large dilution of the donor's plasma by that of the recipient, but also to the great disproportion that exists between the volume of injected plasma and the volume of the recipient's red blood cells. A severe reaction from this cause may occur in the case of a donor with a high titre serum, and when massive transfusions are given. The question does not arise in homologous transfusion. Titre of a serum is the highest dilution of that serum, which bring about clumping when it meets its corresponding agglutinogen in the red blood cells. These donors with a high titre of the agglutinins may prove dangerous. On this basis group 'O' donor with a high titre of agglutinins, has been named "dangerous universal donor". This should apply also to other group donors 'A' and 'B' if the titre of its serum for agglutinins α & β is high, when giving blood to group 'AB' the so-called "universal recipients".

Greval and his co-workers quote Hesse's statement that "the transfusion of blood from a universal donor with a titre of 1 in 16 causes no symptoms, but in cases with higher titre signs of hæmolysis are likely to occur." They observe that they err on the right side, and call 'universal donors of the first choice' the titre of whose serum is below 1 in 16. They say that even a donor whose serum agglutinates the red blood cells A & B in 1 in 16 dilution (but not in 1 in 25) is safe enough, for quantities not exceeding 200 c.c. for an adult recipient, and call this donor 'universal donor of the second choice'. Any one of the 'O' group whose serum titre of α & β agglutinin is 1 in 16 or above, should not as a matter of fact be called "universal donors" but just 'O' group donors, who will be suitable for 'O' group recipients. This safety of titre up to 1 in 16 will perhaps work only when giving ordinary quantities of blood transfusion such as a pint or a little more, in an adult of average height and weight, and not in cases of massive transfusions or in transfusions on children and small built individuals. It is the ultimate dilution of the plasma content of the blood transfused, by the amount of blood and plasma present in the recipient, which will determine if the plasma of the donor will, or will not, be able to agglutinate the recipient's corpuscles.

Apart from this enormous dilution of the donor's plasma by the recipient's blood which comes to the aid in preventing agglutination of the recipient's red blood cells by the donor's plasma, another factor perhaps comes into play, and, may be, has a greater role. Evidence is accumulating that apart from agglutinogens A & B present in the red blood cells, these agglutinogen-like substances or group specific substances, if one likes

to call them in that way, is also present in the tissues, body fluids including the plasma of the individual, in most if not all persons. These substances are specific, *i.e.*, a person of group 'A' has specific substance of the same nature as 'A' agglutinogen and has the property of absorbing or using up α (anti-A) agglutinins, and so is the case with group 'B' for β (anti-B) agglutinins. So it is justified to expect that a good amount of agglutinin content of the donor's plasma is being adsorbed or taken up by these group specific substances present in the body tissues and fluids, and thus the corresponding red blood cells are saved. When serum or plasma of a large number of blood donors are pooled together in a blood or serum bank, it is these specific substances which are responsible for taking up and lowering the titre of agglutinins in the prepared plasma or serum and thus make massive serum and plasma transfusion a possibility. We should not, however, be led away to ignore the agglutinin titre of the donor's plasma on this account as it is always better to take all possible precautions and there is no justification for not doing it. Every hospital doing blood transfusion work, should have in their panel a number of 'O' group donors with agglutinin titre less than 1 in 16. They should try their best to obtain a blood donor of the same group as the patient. Only when such a donor is not available and urgency of the case does not permit a longer search, that these safe 'O' group donors may be used.

With a clear understanding of the above, one should proceed to find a compatible donor for a patient requiring blood transfusion. As a working method these can be done on the following lines:—

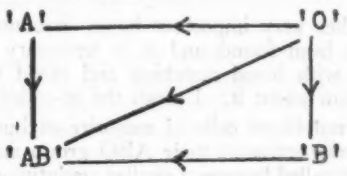
Indirect Matching, i.e., determining blood groups of both the patient and the donor. This in fact will be a theoretical compatibility based on blood groups, *i.e.*, the donor and recipient being of the same group or donor being 'O' group for all cases of recipients and the recipient being 'AB' group for all cases of donors. Here in determining the groups all the precautions must be observed, namely:—

(1) Using sufficiently strong stock sera; as otherwise sub-groups of 'A' (A_1 & A_2) may be missed and a 'A_2' be declared as 'O' group and A_2B as 'B' group. The reacting quality of A_2 class of red blood cells is weaker and may be missed unless a strong sera is used, this is all the more a possibility in A_2B, where 'B' being of a more dominant character, the A_2 shows with difficulty in its presence.

(2) Using optimal proportions of red blood cell suspension and stock sera. Red blood cell suspension should be made about 2-4 per cent in normal saline, *i.e.*, ordinarily to give just a pink colour and not reddish. The serum should not be deficient in proportion to red blood cells, otherwise there is danger of a false negative reaction being concluded.

(3) Observe for at least fifteen minutes—err on the longer side and so it is better to have a moist chamber, without which it may dry up. The latter can be easily made with a soaked blotting paper in a petri-dish of required size and covered by a glass plate. If considered necessary, confirm negative reactions under the microscope.

A diagrammatic representation of blood groups showing compatibility apart from that of its own—is given here. The arrow direction pointing towards the recipient from the donor:—



Direct Matching—This is testing the red blood cells of the donor with the recipient's serum directly. *This test is very important and should not be missed, irrespective of the group being compatible, and must be done with all the possible precautions as to time and optimal proportions.* It has often been found that though they are compatible theoretically due to their blood groups, the red blood cells of the donor on direct matching with the recipient's serum are clumped. We have on three occasions found 'O' group red blood cells being clumped by serum from recipient's belonging to group 'O' and group 'A'. Such observations have also been reported by other laboratories. These may be due to sub-groups not detected during determination or may be due to special types of agglutinogen or agglutinin, characteristic of the particular individual. So this direct matching is not only a check on group determination, *i.e.*, indirect matching, but in most cases one will be excluding the sub-groups and other factors which may be the cause of incompatibility not detected in the indirect matching.

In direct matching rouleaux formation is common and this must be distinguished from agglutination. With the naked eye, whereas one observes irregular sized clumps in actual true agglutination, the deposit in rouleaux formation is an uniform one. The rouleaux formation or as it is called pseudo-agglutination, is quite obvious under the microscope. Addition of an extra drop or two of saline quite often makes this phenomenon disappear. In practice it is not very difficult to distinguish it under the microscope, specially by an experienced worker. Ideally both indirect and direct matching must be done. When we know their groups and find they are different, we are in a position to take precautions advocated, if we are using a donor of a group other than that of the patient.

Cross-matching—This term is used to mean matching of the red blood cells of the donor with patient's serum and red blood cells of the patient with the donor's serum. In those cases where we are giving a blood of the same group as the patient, this test is advocated as a valuable check. If it does not give agglutination both ways, it is said to have been a compatible cross-matching. It will be obvious that it is only possible when both the donor and the recipient are of the same group Thus it will be seen that cross-matching will confirm if the donor and the recipient are of the same group or not, as determined by the indirect test. However, it will not be out of place to mention that in infants agglutinins are not always present at birth and then it slowly makes its appearance. This point must

XUM

be kept in view in cross-matching when infants are involved.

Rh-Factor

Another very important factor involving compatibility has been found and it is necessary that those that deal with blood matching and blood transfusion, should know about it. I mean the so-called Rh-factor.

The red blood cells of majority of human beings contain irrespective of their ABO group an agglutinogen Rh, so called because a similar agglutinogen is found in the red cells of the rhesus monkey (the common brown monkey). Foreign workers report that 85 per cent of the people has this Rh agglutinogen. Greval and his co-worker in India, have found them present in 90 per cent of the people in Calcutta Indians. Unlike A & B agglutinogen, persons who do not have Rh factor in their red blood cells (Rh-negative) do not normally have anti-Rh agglutinin in their plasma, but are liable to form them if Rh agglutinogen is introduced into their circulation. This may occur in two ways: (1) in persons of both sexes when Rh-positive blood is transfused into a recipient who is Rh negative, as this Rh agglutinogen serves as an antigen-foreign matter not present in the individual—and stimulates formation of anti-body in the form of anti-Rh agglutinin, and (2) in women after becoming pregnant with a Rh positive foetus, she herself being Rh negative (the foetus having inherited the Rh agglutinogen from the father). Rh-agglutinogen is believed to be entering mother's circulation and stimulating formation of anti-Rh agglutinin in her plasma. From the transfusion point of view, the importance of the presence of anti-Rh agglutinins developed as a result of transfusion or pregnancy, is that a subsequent transfusion of Rh positive blood may prove incompatible. This point has to be kept in mind when a second or multiple transfusion to a male recipient and in the case of the female with children and pregnancy even the first time; irrespective of the compatibility under the ABO system, and even if using the same donor whose blood proved compatible to the recipient on previous occasions.

Now the problem that arises before a medical man or woman when dealing with blood transfusion, is how to tackle this Rh factor in determining compatibility and thus make blood transfusion as safe as possible. The ideal will be to find out one who is Rh positive from one who is Rh negative and avoid a Rh positive donor for a Rh negative recipient. This will require stock of anti-Rh serum. But as matters stand at present, availability of this serum is very limited and perhaps will not be available for some time to come, except in big laboratories specially doing this work. It is even then not easy to get reliable results when making tests for Rh agglutinogens and anti-Rh agglutinins. The reactions are weaker than the ordinary iso-agglutination reaction and is said to be detected only by the use of a tube technique; they are almost always stronger at 37°C. than at room temperatures. However, Greval and his co-worker have used the glass slide method and have been able to detect.

Under the circumstances most of us will have to work without an anti-Rh serum for the present, and do the best we can. It is the presence or absence of Rh agglutinogen in the donors' red bood cells and the anti-Rh serum formed in the recipient that matters and so by doing the direct matching between the red blood cells of the donor and the serum of the recipient we will be able to a great extent to exclude the incompatibility arising from this factor. But to make this direct matching more rational for this purpose, we should do the direct matching of the donor's red blood cells and recipient's serum, both by the slide method (in a moist chamber as described above and prolonging the observation for an hour, if not two, and keeping it as far as possible near 37°C.) and the test-tube method. In the latter equal volume of the recipient's serum and red blood cells suspension of the donor (2-4%) is taken in a small test tube and incubated in a water bath at 37°C. for two hours—at least one hour if there is urgency. Agglutination or otherwise in the test tube is observed by gently shaking the test tube, when, in agglutination, small clumps will be seen to rise in the supernatant fluid, whereas formation of an uniform emulsion indicates a negative reaction. The test may be confirmed by looking up a drop of the fluid under the microscope. It may be noted that these clumps being very delicate, a vigorous shaking may break them up and one may not be able to see and so gentle shaking is very necessary.

With the above direct matching test, each time a transfusion is given and a careful watch for any signs of incompatible blood transfusion during the operation, one will go a long way towards averting a disaster and is perhaps the only workable method till every one gets standard anti-Rh serum for selecting a panel of Rh negative donors for Rh positive recipients.

Appearance of flushing of face, rigor, bursting headache, pain in the chest and difficulty in breathing during the operation, should put the medical man on guard and he must decide if he is dealing with an incompatible blood transfusion or not, and at least slow up the speed and watch. *Appearance of pain in the small of the back is a definite indication of hæmolytic reaction due to incompatible blood transfusion and the transfusion must be immediately stopped.* Even the nurse under the circumstances must stop the flow and not wait the arrival of the doctor. Later urine may appear as cherry red in colour. Proper treatment should be started and as it is not intended to include treatment in this article, a passing note that, apart from symptomatic treatment, large doses of alkalies by mouth and intravenously to make the urine alkaline are indicated, and a large amount of fluid for flushing out the kidneys is advocated.

Summary

1. Best compatible blood is the blood of the same group as the patient and should be preferred in comparison with the 'O' group blood. All the more, when massive transfusions are desired.

2. Only those 'O' group donors, whose serum titre for agglutinins is lower than 1 in 16, are safe enough to be called "universal donors" for ordinary

(Continued on page 19)

TONSILLECTOMY

—ITS USE AND ABUSE IN CHILDREN*

M. V. SANT, M.S. (BOM.)

Hon. Surgeon, Bai Jerbai Wadia Hospital for Children, Parel, Bombay.

The operation of tonsillectomy is unique in surgery in that it is one of the most extensively performed operations and yet there is so much misconception and ignorance about it. It is estimated that it forms about one third of the total number of operations performed under general anæsthesia in U.S.A. and about 2,00,000 tonsillectomies are done every year in England. In India although reliable statistics are not available, there is no reason to disbelieve that our number will compare favourably wih these two countries.

Every day both the physician and the alert layman are getting increasingly cognizant of the importance of tonsils. This can be clearly seen from the records of one of the biggest children hospitals in India where only 74 tonsillectomies were done in 1932, while that number mounted up to about 350 in 1943, inspite of the fact that many children have gone to the villages on account of the war conditions. The school clinics have been rendering a valuable service by regular periodical examination of the children attending the municipal schools and by having them attended to in time. But there is still a fairly large number of schools run by private or semi-private institutions where there is no medical examination of the children at all. Personally I feel that every child between the ages of 3 and 10 attending any school, must undergo a thorough medical examination, at least once a year, and this should be the responsibility of the State. It is only in this way that we can lay our finger in time on the incriminating tonsils and adenoids and take any action, if necessary to prevent the life-long damage and derive the maximum benefit by a timely operation. There have been views both for and against the removal of tonsils at this age, but I think that with the experience we have gained in the last generation there should be no difference of opinion in condemning to guillotine a tonsil that has been proved guilty of poisoning its master and convicted as such by a competent judge.

If any one doubts the benefits derived in last 20 years from tonsil operations, I would suggest a visit to any primary school and observe the vast changes that have been visible in girls and boys of the present day, and then one cannot but appreciate the truth of the words of that great master, Dan Mackenzie, when he says—"I remember the generation of children before tonsils and adenoids were known. I remember the discharging ears and deafness. I remember the dirty noses and the thick excoriated upper lips. I remember the scrofulous glands in the neck. I remember the vacant stupid faces. I remember the weeping pus. My companions I have seen dying in the middle age of heart diseases contracted in childhood after tonsillitis. Then I turn and look at the young boys and girls of to-day, clean, healthy and stout, and I see this transformation of a race through the influence of a simple operation." When I look back on my own school days I fully appreciate the difference between the children of to-day and my own school friends even in a short span of 15 years.

After having said this much for the operation of tonsillectomy I cannot but feel that the pendulum is swinging rather too much to the other extreme. I have no doubt that quite a large number of children are recommended and submitted for tonsillectomy on inadequate grounds and without proper examination. A visit to an out-patient department of a children hospital will convince you of this. Practically every alternate child comes for removal of tonsils—may be on the advice of the family doctor, a school medical officer or an over-anxious parent. It is very amusing to hear a child coming from the slums of Bombay, when asked about his complaint, telling you only in one word 'tonsils'. They are ever so much convinced about their 'tonsils' that if you tell them otherwise they will refuse to believe you and if you decline to operate they will go to some one else and have their tonsils removed. I remember more than half a dozen such cases where the parents had been kind enough to come and tell me that they got their children's tonsils removed when I had refused to do so, obviously with an underlying suggestion that I would do well to know my job better. I would not blame these people so much as I would the surgeon who operated upon them. It is no wonder then that to-day more tonsils are massacred than is really necessary. In private practice the considerations are many and varied. In hospital practice the junior staff is waiting for 'chances'. A time has come, now, when we should pause a little and take stock of the situation.

The first question that crops up in our mind is; "What is the function of the tonsils? Does it serve any useful purpose or is it only a vestigeal structure?" Various functions have been attributed to it from time to time, but nothing definite has been proved so far. It is no doubt an organ belonging to the hæmopoietic system supplying the blood with lymphoid cells. But considering the other lymphatic tissue, in the body the part played by the tonsils must be negligible. An endocrine function was suggested on many occasions, but it has never been substantiated. Nor, do tonsils furnish any secretion that can be regarded as protective against infection to the upper respiratory tract. As opposed to this a view is expressed by Griffiths that tonsils form a part of the defence mechanism of the body by absorbing small number of organisms and so establishing immunity by gradual dosage. The maximum enlargement of the tonsils according to Fergusson and Deecon occurs between the ages of 5 and 7. This is a critical period in the child's life in the sense that there is a great change in its oral cavity and general development. It is at this age that the child encounters 'herd infection' from a large school herd which is quite different from the small family herd to which a child has already become immune. Then, are

*Read at 7th Maharashtra and Karnataka Provincial Medical Conference, Sholapur, Dec., 1944.

we not doing great harm to a child by removing his tonsils, just at the time when he needs them most, only because they appear to have been enlarged? This enlargement may, for all we know, be a purely physiological one. Are we not blasting the very defence that nature has erected? However, until this problem referred to is solved we must keep our minds open on this subject and adopt an extremely conservative attitude, while ablating an organ from the body about whose function we are so ignorant. It is often observed clinically, when tonsils are removed early, that there is a compensatory hypertrophy of the other lymphatic tissue in the throat. Certainly nature cannot be so foolish as to exhibit so much extravagance unless some useful purpose is to be served. Therefore, in the light of the present knowledge we can sum up the whole question of the function as follows:—While the normal tonsil is not essential for the maintenance of life, it certainly plays an important role in the welfare of the individual at least in early childhood.

Having considered the functions let us now consider briefly the indications that are usually put forth for the removal of tonsils. They can be considered under the following heads:—

(1) Nasal obstruction—mouth breathing and difficulty of deglutition; (2) upper respiratory infections—tonsillitis, sore throat and common cold; (3) cervical adenitis; (4) ear complications; (5) lower respiratory infections—laryngitis, tracheaitis, bronchitis, pneumonia and tuberculosis; (6) scarlet fever, diphtheria and other diseases; (7) malnutrition and anorexia; (8) rheumatism, chorea and heart diseases and (9) mental deficiency and retarded intelligence.

Nasal obstruction—Nasal obstruction is more often due to hypertrophied adenoids than to enlarged tonsils. Mouth breathing and difficulty in deglutition form the main symptoms and when they are due to enlarged tonsils and adenoids they form a definite positive indication for an operation. But before the tonsils and adenoids are held responsible other defects in the nose must be eliminated. If neglected, nasal obstruction due to adenoids will give rise to a train of symptoms such as an open mouth, stupid expression, protruding tongue, narrow high arched palate, crowded teeth, and narrow alæ nasi. There is constant running of mucous discharge from the nose. The mental and physical development is retarded. The speech is defective and the ears are usually affected. Unless the condition is immediately relieved it will give rise to permanent changes in the nasopharanx and a typical adenoid facies will develop. If the operation is delayed too long, it has been found that even after the operation there is very little improvement in the symptoms, which persist as before, because the child became accustomed to them. If there is difficulty of deglutition due to enlarged tonsils they must be immediately removed irrespective of the age of the child but it must be remembered that we are thereby rendering the child more liable to infections of the larynx and the respiratory tract. I will discuss this later on.

Upper respiratory diseases—Tonsillitis forms the most common plea for removal of tonsils. More than 90 per cent of the patients that come for tonsils to the hospital, come for this complaint and countless tonsils are indiscriminately sacrificed without proper investigation and full realisation of the benefits which are derived thereby. It is obvious that if there were no tonsils there would be no tonsillitis and removal of tonsils is by far the surest way of preventing recurrence of tonsillitis. But are we justified in removing the tonsil only because it has been infected once or twice? Has it lost all its usefulness to the host? Do we treat other infected lymphatic glands in the body likewise? Then why this treatment for the tonsils in particular? In early stages it is possible to restore the tonsils to their normal condition by conservative treatment and one must remember that as the child grows in age the frequency of attacks gets less and less and it may be possible by careful treatment to postpone the operation till the child is about 10 or 12 years old. But without a moment's thought these children are needlessly submitted for an operation. It has been proved that the children whose tonsils are removed are subsequently found to be more prone to sore throats and other respiratory diseases of the lower passages, namely bronchitis, tracheatis and pneumonia, than those who have not been operated. This is but natural because the infection which would have met with its first check upwards now travels down with ease due to the breakdown of the first line of defence (*i.e.* the tonsil). I do not by any means suggest that infected tonsils should not be removed. If necessary they must be removed but before they are condemned they must be thoroughly investigated. Personally I have found the following as a good working rule. If the patient has had three or more attacks of tonsillitis within a year and if the condition of the tonsils does not improve after a conservative line of treatment for 15 days, the tonsils must be removed. I will discuss the question of focal sepsis later. As regards sore throats and colds it has been found that although these conditions do show improvement for a short time after the operation, later on these children are much worse off than those whose tonsils have not been removed and their condition is made worse than what it was before. In selected cases good results have been obtained but it was definitely proved in these cases that the tonsils were the culprits. But let it be remembered that indiscriminate massacre of the tonsils for these conditions not only does not improve the malady but on the contrary makes it infinitely worse. It must also be borne in mind that these conditions are not solely due to infected tonsils but that the patient's environments, habits, hygiene and diet also play an important role in their causation and unless attention is directed to these facts tonsillectomy alone will not be of much use.

Cervical adenitis—Tonsils are supposed to be the portals of entry for infection of the cervical group of glands but one must realise that the nasal sinuses, scalp, face, teeth and other lymphatic tissue also drain in these glands. It is not possible to cure adenitis by removal of tonsils alone. Before tonsils are removed it must be decided how far these other factors are responsible for the enlargement of glands. Many a time tuberculous infection is said to be transferred from the infected tonsils to the glands, but it has been observed that not

more than 4 per cent of the tonsils are found to be infected with tubercle bacilli when associated with cervical adenitis. Like other places in the body this is a local manifestation of a general disease and many a time other foci are found to be existing simultaneously in the body along with the glands. Therefore unless the adenitis is secondary to the tonsillar infection it is not likely to be benefitde by removal of tonsils.

Ear complications—It has been commonly supposed that tonsils are solely responsible for the chronic discharge from the ears, mastoiditis, etc. But one forgets that otitis is a local manifestation of a general disease, such as typhoid, measles etc.; Rickets is another condition which is responsible for quite a large number of discharging ears. If tonsils were solely responsible for the ear discharges then we ought to find otitis more common with so many children moving about with bad throats. It is more the general condition of the child that is responsible for the otitis than the septic throat and in all probability the tonsils are affected simultaneously with the ears by the same causative factor. Therefore unless the general condition of the child is improved little is to be gained by a wholesale tonsillectomy. In the early days I used to remove tonsils rather freely for this condition and I found very few children relieved of their ear discharge if no attention was paid to their general condition. Now a days I have adopted a more conservative attitude with more attention to the general health and tonsillectomy is resorted to only in selected cases. So far I have not repented. My experiences being limited I can make no definite statement on this point.

Scarlet fever and diphtheria—It has been definitely found that children do well and are generally benefited by removal of tonsils so far as these conditions are concerned, especially the diphtheria carriers; so whenever this condition is definitely ascertained there should be no hesitation in removing the tonsils.

Malnutrition and anorexia—In deciding whether or not the child is keeping up to the proper development for his age one has got to consider many factors, *viz.*, heredity, environments, diet, hygiene etc. It is most unfair to blame the tonsils alone for this. If the parents are of a small and delicate stature we cannot expect the child to be an athlete. Besides, one cannot go by the rule of thumb and compare every child with the standards laid down in the tables of average weights and heights. One must take an all round view and judge every child as a special case on individual merits. The best criterion for this is to maintain a regular record of the child. If it is found that a child that has been growing and gaining regularly all along, becomes suddenly arrested in growth in a few months or in a year, then only we can say that the development is interfered with. We must then investigate the cause of it. After having eliminated other factors if the tonsils are found to be septic there should be no hesitation in removing them. In selected cases good results have been obtained. Similarly it is seldom true that the tonsils are responsible for loss of appetite. The best thing to find out if the child has really lost his appetite is to separate the child from the parents and to keep it in the company of other children. Many a time anorexia has been cured by this simple measure. If after a careful examination the tonsils are found to be infected and are known to be poisoning the system by their toxins they may be removed but it is estimated that less than 50 per cent of the children show any improvement after the operation.

Mental deficiency and retarded intelligence—Here also hereditary influence plays a great role. There is no evidence to enable one to say that presence of tonsils and adenoids retards the mental development and intelligence of the child. I quite admit that an exuberent growth of adenoid vegetations or excessively hypertrophied tonsils will interfere with the normal process of respiration and give rise to general ill health and the train of symptoms mentioned above, and it will indirectly interfere with the concentration power of the child. One should not hesitate to remove tonsils and adenoids under such circumstances, but one must bear in mind that one cannot make a normal child out of a sub-normal one nor a superior out of one who showed average intelligence just only by tonsillectomy. Very often doctors and parents press for this operation with such an expectation and it is no wonder then that they are disappointed. Where a child is finding it difficult to carry on the school work efficiently and where examination shows tonsils and adenoids to be definitely septic their removal is advisable. Such children frequently find it less difficult to keep up to their school work after the operation.

Rheumatism, chorea and heart disease—I have deliberately kept this subject last. When we come to think about these conditions, we are confronted by that very much vexed problem of focal sepsis about which so much is written and so little is definitely known. It may at once be stated that chorea is not at all improved by an operation on the tonsils and that if at all it is made worse. Very often the operation is recommended with a view to avoid these complications but statistics of Kaiser extending over a period of 10 years show that the development of rheumatic carditis in tonsillectomized children is 1·1 per cent while that in controlled is 1·3 per cent *i.e.* difference of only 0·2 per cent. So obviously it does not much matter whether the child's tonsils are removed or not. But the fear of heart disease has taken such a firm grip over the minds of both the medical men and the general public that one seldom finds a week passing without coming across a case in which the removal of the tonsils of a child is urged on these indications. Certain things although they do not appeal to reason find acceptance even among rational persons simply because they have been universally mentioned and one cannot gather sufficient courage to go against them. When we come to consider the question of rheumatism we are no better. One cannot guarantee absolute cure by operation nor does an operation serve as a prophylactic measure. At present the evidence at hand does not justify universal adoption of tonsillectomy for rheumatism, although it is found that children subjected to repeated attacks of sore throat have, after undergoing an operation for tonsillectomy, less chance of getting rheumatism than those whose tonsils are not

XUM

removed. But this number is comparatively very small to justify wholesale tonsillectomy. Once the rheumatic infection has manifested itself tonsillectomy does not safeguard a child against recurrent attacks nor against the development of carditis. Inspite of this practically in every rheumatic child the removal of tonsils is insisted upon. We do not know the causative agent of rheumatism nor its etiology. It is equally difficult on inspection to decide whether the tonsils are infected or not. Ragged tonsils, enlarged tonsils, expression of pus from the crypts, and cultivation of bacteria do not necessarily indicate inflammation. Bacteria can always be found on mucous membranes and Kaiser has estimated that 40 per cent of the normal children harbour streptococci in their throat without any symptoms whatsoever. The cheesy material found in the crypts is no more pus than that it is a liquid composed of cell detritus, desquamated epithelium, leucocytes and bacteria. It is not always the result of inflammation and is no more septic than the cheesy material scraped from other less accessible sites in the gastrointestinal tract. It is just as unreasonable to consider that the tonsils are infected, because they yield positive culture, as to say that the colon which is swarming with bacteria is infected. Even when pus is detected it cannot be definitely said that this pus is the cause of rheumatism. If the pus in the tonsils is capable of mischief, what about the pus in other places in the body like lung, abscess, bronchiectatic cavities, osteomyelitis etc. I am afraid this question is very intricate and it is more for the physician to decide in this matter whether the tonsils should be removed or not. The removal of tonsils for rheumatism should be considered with due regard to the following points.

(1) The theory of focal infection is not proved.

(2) The infecting agent is not known.

(3) The large number of children whose tonsils are infected and not removed are no worse than those whose tonsils are removed by operation.

(4) Even after removal many patients do not improve and continue to suffer as before.

(5) The benefits likely to be derived must be weighed with the hazards of the operation.

(6) Many so called infections heal after a general systematic treatment, attention to diet and hygiene.

All these factors are to be considered before a child is submitted to an operation.

Finally, a word or two about septic tonsils. There seems to be a popular belief that an enlarged tonsil must be a septic one. So many cases are referred to the surgeon for enlargement of tonsils. I have mentioned above that mere enlargement is more often physiological than inflammatory and it is important to bear in mind that a small buried, dull looking tonsil causes more mischief than a large hypertrophied and congested one. I cannot believe that one can diagnose a septic tonsil in a moment just by a glance at the child's throat. It has got to be considered along with other systemic signs and symptoms and the opinion has got to be offered after the due assessment of all the factors concerned.

In the end, I would like to say a few words regarding the manner in which these operations are undertaken. Everywhere we find that a child is brought to an outpatient department, cursorily examined, usually by a junior intern, and fixed up for an operation on the following day. I have always felt that this task ought to rest with the senior members of the staff. We have just now seen the various factors that one has got to consider before submitting a child to the operation, and I think a junior inexperienced intern cannot do sufficient justice to these cases. It is very easy to operate but difficult to decide upon an operation.

Both in the hospital and private institutions these children are admitted for the operation in the morning and discharged the same day after a few hours detention in the ward. This is most unfair to the patient. Most of our hospital type patients are living under very deplorable and unhygienic conditions in their houses and a newly operated child has got more risks at home than in a hospital. I would therefore urge that these children should be admitted at least a day before and kept in the hospital for 48 hours after the operation. No operation should be undertaken unless the child has received preoperative treatment at least for a week. In every case urine examination and coagulation time of the blood must be done. I have no time to go into the details but I would like to stress one more point. We must remember that this is probably the first incident of its kind in the child's life. So we must avoid every kind of roughness that is likely to leave permanent impressions on the child's mind. It is seldom realised what psychic trauma is caused to the child by rough handling. We should be delicate and gentle to the child and with little persuasion we will get perfect co-operation from him which is not a small asset. The child should not be told that the operation will not hurt him. He will very soon find out that he has been deceived and once he loses faith in us, he will refuse to co-operate with us and will not listen to anything we tell him.

I am aware that I have left many points untouched. The subject is very wide indeed and too much can never be said on it. I have placed before you a few thoughts that have been uppermost in my mind. They should be taken for whatever they are worth.

SPECIAL ARTICLE

THE ARABIAN BACKGROUND OF MODERN SURGERY

S. MANSUR HUSAIN, B.SC., M.B.B.S.,
Lucknow

It is a historical fact that "While Christendom was still in the Dark Age the Arabian Scholars of Islam began to display a remarkable activity in the department of medicine."[1] "The Arabs drove back the barbarism which had already existed in Europe for two centuries."[2] "With the eighth century we see the first dawn of civilization in the West, the chief impulse to which was the early contact between the Latin West and Islam."[3] The intellectual rays emanating from Spain, the most enlightened and cultured country in Europe, produced the re-birth of human intellect in the Latin West.[4]

On the barren and nascent soil of Europe the seeds of the Arabian medicine and surgery were sown as early as the ninth century. "For five or six centuries all the universities of Europe depended, for the instruction they imparted, on the translations of the Arabian works. In some branches of learning for example medicine, the influence of the Arabs remained dominant till our own time (*i.e.* last quarter of the 19th century) for, upto the end of the last (18th) century, commentaries were being written on Avicenna in France."[5] "It was in the very near past that the translations of the Arabian books were eliminated from the curricula of our universities."[6]

History records the permeation of the Arabian principles throughout the Latin West which had no medical system of its own, and the practice of the surgery of the Arabs for centuries. The saturation of Europe with Arabian ideas, which have been transmitted through successive centuries to our own time, really constitutes the foundation of all modern progress.

The success and progress of the surgical art is bound up with the:—

1. Correct knowledge of anatomy.
2. Development of the operative technique.
3. Successful anæsthetic methods.
4. Success of the hæmostatic methods.
5. Elimination of sepsis.
6. Well-equipped and well-organised hospitals.

For want of space we have to content with brief references to these points.

1. The knowledge possessed by the Arabians was far superior to that of Galen and was a connecting link between the crude Greek anatomy and the modern science. The formidable operations they undertook and the success they achieved would not have been possible without full acquaintance with the anatomy of the human body. Perfect familiarity of the surgeon with anatomical structures was greatly stressed on by the Arabians *e.g.*, Zohrawi,[7] Bu Ali Saina[8] and others.

2. The Arabians had greatly developed the operative technique. The al-Tasrif of Zohrawi, the first illustrated book on surgery including operative surgery, gives precise details of the surgical procedures.[9] Perusal of this book as well as the earlier works *e.g.*, the ninth book of Kamilus Sanaya (Liber Regius) of Ali Ibnul Abbas Majusi are full of such details.

3. Anæsthesia—general, local and by inhalation—was commonly practised by the Arabians. Nicholas and Theodoric of Bologna described the "Soporific Sponge" of the Arabs which was used by the Arabians to produce anæsthesia by inhalation.[10] "Anæsthesia by inhalation, a process known to the Arabian writers, was first mentioned in Latin Europe in Passionarius Galeni (1050) the work of Gariopontus.[11] Bu Ali Saina has described a number of methods for producing unconsciousness.[12]

4. Apart from cautery which was very popular with the Arabians, and medicinal hæmostatics, ligature of the arteries was for the first time used and popularised by the Arabians. The ninth book of Liber Regius of Majusi, one of the earliest Arabian books on surgery, shows that it was being very commonly used even then; then silk, catgut, hair of women (and not of horse) and cotton thread were the material used. Bu Ali Saina, an early Arabian writer, has also mentioned ligature of arteries.[13]

5. It may appear surprising but nevertheless it is true that the theory of infection and contagion originated, the Greeks having failed to emphasise it, with the Arabians who devoted special attention to it.[14] It constituted the basis of their medicine and surgery. The modern age has only elaborated it, provided details and filled in the gaps in their knowledge. The "foreign heat", "causal agent", "extraneous heat" or "putrefactive matter" of the Arabians causing sepsis and putrefaction turned out to be the microscopic organisms of the present age. The outlines of the theories of infection, sepsis, immunity etc. were very well known to the Arabians, even though they were ignorant of the nature of the real causes.[15] Equally surprising it may be but the "laudable pus of Galen and of the pre-modern Europe" was never laudable to the Arabians who made strenuous efforts to avoid it.

The free use of wine and alcohol, the most strictly and vehemently forbidden thing in Islam, in cleansing (sterilising) wounds and as a dressing material indicates their anxiety to avoid Taaffun (sepsis) of which they appear to have been mortally afraid. Zohrawi regarded alcohol as the best application to wounds. Bu Ali Saina in his Qanoon says: "The best thing to use is a dressing of gauze soaked in astringent wine."[16] As a result of their teaching it had become common in Europe[17] but seems to have been neglected in pre-modern era. The use of other antiseptics in the treatment of wounds *e.g.*, copper sulphate and silver and mercury salts etc. similarly implied their attempts at safeguarding against infection and suppuration. Their dread of sepsis is manifest throughout their writings. The fundamental principle of the treatment of wounds was: "Prevent sepsis as much as possible".[18] Messy, oily and greasy applications which became popular in Europe in centuries preceding the modern age were deprecated by the Arabians.[19]

Stress was laid on the use of only "clean" water. Clean instruments were not allowed to be touched with dirty hands and special forceps for lifting them were in

XUM

use.[20] Some surgeons used to boil their instruments as confessed by one on his death bed.

6. "The Arabs developed the hospitals on efficient lines".[21] "Indeed the first hospitals worthy of the name really date from the Islamic period".[22] "They established in every city public hospitals".[23] "The nursing was admirable".[24] "The organisation of hospitals was very advanced".[25] "The Arabian hospitals were well organised and deservedly famous".[26] "The description of it (the al-Mansur Hospital at Cairo) reads like that of a twentieth century institution with hospital units".[27] From this short testimony it will appear that the Arabian hospitals provided the necessary facilities for the practice and success of surgery. Thus armed they devoloped surgery to a high degree.

Operations for piles, fistula-in-ano, empyema, varicose veins, hydrocele, varicocele, elephantiasis, abscess of liver, undescended testis, hernia, aneurysm, tumours etc were commonly performed. Lithotomy including vaginal lithotomy,[28] lithotrity,[29] dilatation of constricted passages, tracheotomy, forcible reduction of spinal deformities,[30] amputations,[31] ligature of arteries suture of nerves, suture of arteries, suture of intestines,[32] trephining,[33] catheterisation,[34] Caesarian section,[35] were a few of the operations performed by the Arabians. All fractures and dislocations were treated. Artery forceps, needle-holders, catheters both metallic and flexible, splints, syringes, sounds, retractors, specula were some of the innumerable instruments mentioned and illustrated in the al-Tasrif of Zohrawi. Primary suture was practised; drainage and counter-openings were of importance. Twenty varieties of sutures are described in Zohrawi's book. Saline water was utilised in washing and dressing wounds. Plaster of Paris was known.

Tonsillectomy by dissection or guillotine method; removal of adenoids and enlargements in the nose *e.g.*, polypi and tumours, surgical approach to the external auditory meatus were a few of the operations performed on the nose, throat and ear.

Among other procedures dental surgery consisted of extraction and filling-in of teeth, covering them with gold and silver, fitting in of artificial teeth etc.

Some of the operations done by the Arabians were the delivery of the fœtus in abnormal positions, instrumental delivery (with forceps), surgical removal of the dead fœtus, dilatation of the os etc. Vaginal speculum was in use and obstetric forceps was for the first time invented and used.

"The knowledge of ophthalmology was particularly advanced".[36] Operations for pannus, akin to the modern operation of periotomy, operations for ectropion, entropion, pterygium, ptosis, symblepharon, trichiasis and large granules of trachoma, the removal of foreign bodies, operative treatment of chemosis, mucocele, lacrymal fistulæ, chalazion, tumours etc were commonly practised. Apart from the regular operation for the extraction of the opaque lens in cataract, which has furnished the back ground of the modern operation, immature cataract was also removed by sucking it out with an especial instrument. Optics was highly developed and glasses were prescribed. "The practice of Islamic ophthalmology need not be considered here. Suffice it to say that the operative technique was extremely advanced".[37]

Most of the formidable operations performed now were also undertaken by the Arabians. Some of the operations coincided with the present practice.[38] Numerous important medical and surgical discoveries were made.[39]

The Arabian surgery served as a basis for modern development and especially the surgical work of Abul Qasem "helped to lay the foundation of surgery in Europe".[40] The revival of the art in comparatively recent age in Italy and France was mainly due to the influence of Arabian surgery. "The early progress in surgery began with the Arabs and upto the present age (nineteenth century) European schools of medicine entirely depended upon the translations of their works".[41] Nor was their surgery behind their medicine. Albucasis of Coordova shrinks not from the performance of the most formidable operations in his own and in the obstetric art. The actual cautery and the knife are used without hesitation".[42]

The influence of Hally Abbas' (Ali Ibnul Abbas Majusi) surgery became noticeable early in the twelfth century. The most famous Arabian work on surgery was the al-Tasrif of Abul Qasim Zohrawi (Albucasis). It was the standard book in Europe for more than five hundred years and was translated into all the languages of that continent. In 1778 Channing published at Oxford its original Arabic text with its Latin translation.[43] Le Clerc published La Cherurgi d' Albucasis in Paris in 1881.[44] "Albucasis was the medical authority most frequently consulted by the surgeons of the mediæval times".[45] Guy the Chauliac, the father of French surgery, who attached a Latin translation of the al-Tasrif to one of his books, propagated the Arabian surgery.[46] "The surgery of Albucasis became firmly grafted in Europe after the time of Guy de Chauliac".[47] "The methods of Albucasis eclipsed those of Galen and maintained a dominant position for five hundred years".[48] The al-Tasrif of Zohrawi had become a classic in the medical schools of Europe.[49] Abul Qasim Zohrawi (Albucasis) raised surgery to a respectable position.[50] Rolando, Hugh, Mondeville Theodoric, Bruno, Guy de Chauliac, Rogers, Four Masters and others were all students and practitioners of the Arabian surgery. "The Arabic sources of Rogers are undoubted, and thus it was that Rogers, the ultimate source of all earlier surgeons, permeated the medical system of Europe with Arabist ideas".[51] Mondeville, Paracelsus and Lister according to Albutt followed the principles of Theodoric,[52] and Theodoric was an Arabist surgeon.[53]

It will thus appear that the Arabs sowed the seeds of their surgery on the "barren" soil of Europe. The Arabian surgery was practised for centuries in the Latin West and, after passing through a period of degeneration, was revived in comparatively recent times. It passed through successive generations to the modern age which developed it to a marvellous degree.

REFERENCES

[1] CAMPBELL, D.—Arabian Medicine and Its Influence on the Middle Ages. Kegan Paul, Trench Trubner & Co. Ltd., London. 1926, p. 112.
[2] CUMSTON, C. G.—The History of Medicine. Kegan Paul, Trench, Trubner & Co. Ltd., London, 1926, p. 185.
[3] CAMPBELL, D.—*loc. cit.*, p. 106.
[4] *Idem—loc. cit.*, p. 197.
[5] LE BON. G.—Civilization de Arabes. Translated by Syed Ali Bilgrami, p. 515.
[6] *Idem—Ibid.*, p. 401.
[7] CUMSTON, C. G.—*loc. cit.*, p. 201.
[8] GRUNER, O. C.—A Treatise of Canon of Medicine Avicenna. Luzac & Co., London. 1930, p. 520.
[9] CUMSTON, C. G.—*loc. cit.*, p. 202.
[10] CAMPBELL, D.—*loc. cit.*, p. 56.
[11] *Idem—Ibid.*, p. 120.
[12] GRUNER, O. C.—*loc. cit.*, p. 413.
[13] LIBBY, W.—The History of Medicine, 1922, p. 79.
[14] ARNOLD, T. AND GUILAUME, A.—The Legacy of Islam. Clarendon Press, Oxford, 1931, p. 340.
[15] GRUNER, O. C.—*loc. cit.*, p. 175.
[16] *Idem—Ibid.*, Section 1065.
[17] GARRISON, F. H.—The History of Medicine, W. B. Saunders, London. Second Edition, 1917, p. 115.
[18] GRUNER, O. C.—*loc. cit.*, Section 1062.
[19] *Idem—Ibid.*, Section 1065 & 1066.
[20] BEK. A. I.—The Surgical and Ophthalmic Instruments of the Arabs.
[21] CAMPBELL, D.—*loc. cit.*, p. 56.
[22] CUMSTON, C. G.—*loc. cit.*, p. 208.
[23] ALI, SYED AMEER—The Spirit of Islam. Cristophers Limited London, 1922, p. 385.
[24] OSLER, W.—The Evolution of Medicine, p. 102.
[25] CUMSTON, C. G.—*loc. cit.*, p. 210.
[26] OSLER, W.—*loc. cit.*, p. 102.
[27] *Idem—Ibid.*, p. 102.
[28] CUMSTON, C. G.—*loc. cit.*, p. 203.
[29] *Idem—Ibid.*, p. 202.
[30] GARRISON, F. H.—*loc. cit.*, p. 116.
[31] *Idem—Ibid.*, p. 116.
[32] ZOHRAWI, ABUL QASIM (ALBUCASIS)—The Al-Tasrif., The Nami Press, Lucknow.
[33] BEK, A. I.—*loc. cit.*
[34] Ghena Mona of Abul Mansurul Hasan al Qamari—Translated by the Madamel Advia, Lucknow, p. 246.
[35] DRAPER, J. W.—A History of the Intellectual Development of Europe. Bell & Sons Ltd. London. Vol. II, p. 123.
[36] LIBBY, W.—*loc. cit.*, p. 90.
[37] CUMSTON, C. G.—*loc. cit.*, p. 204.
[38] LANE-POOLE, S.—The Moors in Spain. T. Fisher Unwin Ltd., London, p. 144.
[39] *Idem—Ibid.*, p. 144.
[40] ARNOLD, T. AND GUILAUME, A.—*loc. cit.*, p. 331.
[41] LE BON, G.—*loc. cit.*, p. 455.
[42] DRAPER, J. W.—*loc. cit.*, Vol. II, p. 39.
[43] CAMPBELL, D.—*loc. cit.*, p. 166.
[44] *Idem—Ibid.*, p. 90.
[45] CUMSTON, C. G.—*loc. cit.*, p. 201.
[46] CAMPBELL, D.—*loc. cit.*, p. 43.
[47] *Idem—Ibid.*, p. 83.
[48] CAMPBELL, D.—*loc. cit.*, p. 88.
[49] CUMSTON, C. G.—*loc. cit.*, p. 200.
[50] *Idem—Ibid.*, p. 201.
[51] CAMPBELL, D.—*loc. cit.*, p. 133.
[52] GARRISON, F. H.—*loc. cit.*, p. 136.
[53] CAMPBELL, D.—*loc. cit.*, pp. 56, 127, 132 & 174.

(*Continued from page 12*)

quantities of blood transfusions, say, a pint or a little more.

3. Direct matching of the red blood cells of the donor with the recipient's serum should always be done irrespective of their group compatibility, as this will not only be a check, but in most circumstances sub-groups and other factors will be excluded.

4. Direct matching if prolonged for an hour or two, and specially if done by the test tube method at 37°C will go a long way towards excluding the Rh-factor, and is perhaps the only way till stock anti-Rh sera are available for all the laboratories.

REFERENCES

GREVAL, CHANDRA AND WOODHEAD—*Indian J. M. Research*, Jan. 1941.
WHITBY, L. E. H. AND BRITTON C. J. C.—Disorders of the Blood, London 1942.
DRUMMOND, R.—*Brit. M. J.*, **2**:319, 1943.
GREVAL, S. D. S. AND ROY CHOWDHURY, A. B.—*J. Indian M. A.*, **13**:65, 1943
BOORMAN, K. E. AND DODD, B. E.—*J. of Pathol. & Bact.*, July, p. 329, 1943.
BOORMAN, K. E., DODD, B. E. AND MOLLISON, P. L.—*Brit. M. J.*, Nov. 7, 1942, p. 535.
Quoting from Lancet (Vol. I, May 8, 1943 Current Topics p. 587)—*Indian M. Gaz.*, **78**:609, 1943.
WIENER, A. S.—Blood Group and Blood Transfusion. London, 1939.

22ND ALL-INDIA MEDICAL CONFERENCE

The following office-bearers were elected at a meeting of the Reception Committee of the Conference which is to be held in Amritsar by the end of December, 1945:

Chairman—Dr. H. F. Maneckshaw.
Senior Vice-Chairman—Dr. Chunilal Bhatia.
Vice-Chairmen—S.B. Dr. Sohan Singh, Dr. Amir-ud-Din, R.S. Dr. Het Ram Aggarwal, Col. Amir Chand (Lahore), Dr. R. S. Sharma (Ferozepore), Dr. Chowdhari Mohammad Nawaz (Lyalpore).
Hony. General Secretary—Dr. Faqir Chand Shori.
Hony. Joint General Secretary—Dr. R. K. Malhoutra.
Hony. Organising Secretary—Dr. Sain Das Vohra.
Assistant Organising Secretaries—Drs. Jugal Kishore Nayyar, Ram Lal Khorana, Imtinan Ilahi.
SCIENTIFIC COMMITTEE:—*Chairman*—Dr. Manmohan Singh. *Secretary*—Dr. Balbir Chand Bhandari.
EXHIBITION COMMITTEE:—*Chairman*—Capt. Dr. M. S. Segat. *Secretary*—Dr. Harbhajan Singh.
ACCOMMODATION COMMITTEE:—*Chairman*—Dr. Bodh Raj Nanda. *Secretary*—Dr. Monohar Lal Kapur.
FINANCE COMMITTEE:—*Chairman*—Dr. R. K. Malhoutra. *Secretary*—Dr. Bhagwan Singh Uppal.
PUBLICITY COMMITTEE:—Dr. Ishar Das Bhatia. *Secretary*—Dr. Fakhar-ud-Din.
ENTERTAINMENTS COMMITTEE:—*Chairman*—Dr. Sujindar Singh. *Secretary*—Dr. R. P. Malhoutra.
SANITATION COMMITTEE:—*Chairman*—Dr. S. Rozdon, M.O.H. *Secretary*—Dr. Gian Singh.
RESOLUTIONS COMMITTEE:—*Chairman*—Dr. B. L. Kapur. *Secretary*—Dr. R. C. Goulatia.
MEMBERS OF THE EXECUTIVE COMMITTEE:—Dr. B. L. Kapur (Lahore), R.S. Dr. S. N. Kaul (Lahore), Dr. K. L. Pathak (Ludhiana), Dr. Gurmukh Singh (Tarantarn), Dr. Baldev Singh, Dr. (Miss) S. Bhatia, Dr. Shanti Sachdeva, Capt. Dr. Tulsi Das, Dr. Anup Singh, R.S. Dr. Guran Ditta Kapur, Dr. Fakhr-ud-Din, Dr. Manohar Lal Chopra.

Hall Gate
Amritsar

FAQIR CHAND SHORI
Hony. General Secretary
22nd All-India Medical Conference

XUM

CASE NOTES

HEADACHE IN AMOEBIASIS

K. L. CHOWDHURY
Medical College, Agra

Man's body is a macrocosm for innumerable micro-organisms. Entamœba histolytica is one of them which shows various manifestations. One of its manifestations, headache, is the subject of the present paper. In literature we could not find many references regarding this symptom in amœbiasis. The author had to treat two cases whose brief clinical notes are given below.

Report of Cases

Case 1—Mrs. B., 36 H. F. was suffering from severe intractable headache confined to left half of the head for 6 months. This was not amenable to symptomatic treatment. The headache was so severe that she used to take 6 to 8 packets of "Aspro" a day without any relief whatsoever.

Personal history: mother of 6 children, last child 2 years old. There was no abnormality in menstruation.

Investigations made: *Eye test*—0·5 dsp B.E. (This was tested first as she was using spectacles). No refractive error. W.R. negative. Blood pressure 116/78 mm. Hg. Examinations of ear, nose, throat, and sinuses and of urine revealed nothing abnormal. Stool showed cysts of Ent. histolytica.

Treatment: Emetine one grain daily. The headache disappeared after two injections. The full course of 9 injections was given. This was followed by a course of enterovioform. The case is being followed uptil now. There is no more headache.

Case 2—Mrs. S., 26 H. F. was admitted for amenorrhoea for 5 months and intractable headache for 5 months.

Personal history: mother of 3 children, last child 4 years old. Amenorrhœa 5 months. No other history of any disorder.

Investigations made: Pregnancy excluded at the outset. Slightly anæmic. Hb 73%; total R.B.C. 3·8 million and W.R. negative. Blood pressure 116/74 mm. Hg. Examinations of the eyes, ear, nose, throat and sinuses negative. Urine showed no abnormality. Stool showed both vegetative and cystic forms of Ent. histolytica.

Treatment: Emetine 1 gr. daily. Headache disappeared after 3 injections. Patient had a full course of 9 grs. of emetine. She is doing well now (4 years).

Discussion

From the above clinical reports it is evident that the main complaint of the two patients was headache of severe type. On careful enquiry, no history of amœbiasis was elicited. Regarding the pathogenesis of the complaint, the author cannot express any definite opinion but it is possible that Ent. histolytica produces some sort of toxin which is responsible for the headache.* The complete relief of headache with emetine therapy was dramatic. That such a complaint can be produced by Ent. histolytica infection has to be borne in mind otherwise the patient will be treated on other lines with no improvement. The author urges a through examination of stool in patients complaining of headache particularly so, when there is some other manifestation of amœbiasis.

---

* It is quite possible that the ulcers form a suitable nidus for other organisms, which might produce a toxin as suggested by Napier (Principles and Practice of Tropical Medicine) or the symptom may be due to neurasthenia as suggested by Manson-Bahr (Tropical Diseases)—Editor, *J. Indian M. A.*

KERATITIS PUSTULIFORMIS PROFUNDA

M. B. DWIVEDI, D.O., M.B.B.S.,
Hony. Ophthalmic Surgeon, Civil Hospital, Ahmedabad

A patient, aged 25 years, male, came under my observation on 18-2-44.

The condition of his right cornea on that day was as follows: Three puncate dots of infiltration on the central part of the cornea with signs of irritation and congestion. They did not stain with fluorescein. The picture looked like superficial puncate keratitis and the usual treatment was administered.

On 24-2-44, the dots were found increased in size and a little hypopyon was noticed and the dots appeared as yellowish white infiltrates in the deeper layers of the cornea. They did not stain with fluorescein. In spite of every possible treatment, the disease remained almost stationary.

On 21-3-44, blood examination for Kahn test was suggested and it was found to be positive. Anti-syphilitic treatment was started with As. and Bi. and on 31-3-44, patient's condition was found very much improved and on 14-4-44, he was discharged from the hospital. Hypopyon was absorbed, the eye was quiet and the infiltrations remained as small opacities.

Summary—A rare case of keratitis pustuliformis profounda is described. The condition is due to syphilis. It failed to respond with ordinary treatment but as soon as antisyphilitic treatment was started, it underwent resolution with remarkable rapidity.

JOURNAL OF THE

INDIAN MEDICAL ASSOCIATION

CALCUTTA, OCTOBER, 1945

THE WAR ENDS

Every body is happy that the World War has ended. It will be a long time before every one will feel it materially, but that the night mare has passed is a relief to the millions throughout the World. Through blood, toil and tears during the six years of darkness, triumph of victory is only a silver lining in the clouds. Enormous problem faces the victor and the vanquished alike. The question of rehabilitation feeding the starved, building up the bomb-wrecked houses, factories and bridges are problems as serious as conducting the War.

Looking back among these miseries and destruction, one finds the advancement of science in every direction. Medicine has made vast strides during the period of War. Due to the unique development of aerial warfare, the difference between the front line and rear disappeared to a large extent and doctors functioned not in the rear only during this War. Their duties extended in all stages from the firing line up to the convalescent homes. It has been realised that prompt attention to the wounded in the front line followed by quick transport to the base hospital could save many lives. Along with it preventive medicine has almost effaced the dangers of contagious diseases of War. The comparative figures of the American Army speak for themselves. Thus while the death rate of the wounded in World War I amounted to 8·1 per cent it is only 3·3 per cent in World War II. Meningitis mortality was 38 per cent in World War I and 4 per cent in World War II. The figures for pneumonia mortality were 28 per cent in World War I and 0·7 per cent in World War II. The annual death rate per thousand for all diseases in the Army, excluding surgical conditions amounted to 15·6 per cent in World War I and 0·6 per cent in World War II.

For the battle casualties, plasma, sulpha, and morphia reached them in the firing line. Transportation of the wounded by automobiles and aeroplanes had become an everyday affair. In some army, major operations were performed on the transport plane. The quickness of medical aid has saved many a life and limb. Researches were carried out for the control of infectious diseases, for new therapeutic agents, insecticides and insect repellents, the use of blood transfusion and blood substitutes, repair of injured nerve and defects of the skull, the treatment of chest and abdominal wounds, vascular injuries etc. Banks have been established for blood, nerves, skin and cornea from where they could be drawn when necessary. New branches of medicine such as neuropsychiatry, aviation and naval medicine have made splendid progress. Fundamental studies of fitness and fatigue in different climates have changed the whole outlook of human endurance and psychosomatic medicine has stepped in to take care of the shell shocks, D.A.H. etc. of World War I. Mass radiography of the chest has been able to detect early pulmonary tuberculosis and thus check the disease at its onset.

The outstanding additions to medicine during World War II are Penicillin and D.D.T. Penicillin with its multitudinous applications and low toxicity has saved many invaluable lives. Its value, indications and dosage are all established. On the other hand, destruction of lice and control of epidemic typhus became possible because of methyl bromide gas and D.D.T. A striking example of the efficiency of the latter was demonstrated in Naples, where some 2 million civilians were deloused within a period of two months, thus checking the spread of epidemic typhus. D.D.T. has also been found to be useful against mosquitoes and if the supply is abundant and the price reasonable, malaria, the highest killer of mankind may disappear from the world in near future.

Against all these measures to save human life, one is stupefied by the powerful weapon of mass destruction developed during this War, on land, sea, and air. The 'block buster' and 'grand slam' bombs were used against V_1 and V_2 bombs. The War ended with the terrible 'atom bomb', the fiercest imaginable weapon of destruction of humanity. Scientists should look out before they hand over such a terrible weapon in the hands of fighting nations. But the harm has already been done. What about the future?

THE COMING CONFERENCE

The Twenty-Second Session of the All-India Medical Conference is due to take place at Amritsar during the Christmas week. One of the special features of this annual event of vital importance lies in the deliberations of its Scientific Section. Now that the incubus of a total war has released its all-absorbing grip on the nerve and intellect of scientific workers, this year's scientific meetings bid fair, more than ever, to provide an excellent forum not only for discourses and dissertations rich with the varied experience of a just finished warfare, but also for free and healthy exchange of views and scientific data among members of a sacred brotherhood whose proud privilege it is to think and work for a healthier and happier society.

Let us hope that the greatness of the occasion will call forth quite a crop of papers and articles replete with both academic and professional interest.

XUM

CURRENT MEDICAL LITERATURE

Problems of Aviation Medicine

The Oliver-Sharpey lectures by Dr. B. H. C. Mathews, printed in July 21 and July 28 issues of Brit. M. J. on the physiological problems of flying are clear and fascinating; they should be read in their entirety. In general terms it can be said that men cannot fly above 20,000 feet without a supplementary supply of oxygen, or above 40,000 feet without a pressure suit or cabin. At 40,000 feet the pressure of the atmosphere is only one-fifth of that at sea-level. It might be thought that the flyer could overcome this disability by breathing 100 per cent oxygen instead of the normal 21 per cent, but matters are not so simple as this, owing to the presence of a constant pressure of water vapour and carbon dioxide in the lungs. In fact, at 50,000 feet water vapour and carbon dioxide will completely fill the lungs unless the aviator adopts the tactics of the submariner and surrounds himself with a pressure suit or a pressure cabin. The other limit to high flight is the occurrence of decompression sickness, or "bends" due to the formation of bubbles of gas in the body fluids and tissues when the atmospheric pressure is so greatly reduced. Finally, high flight is at all possible only if the body is protected from cold. At 40,000 feet the temperature of the air is −55°C, and destructive frost-bite occurs if the hands are exposed for more than a few seconds. The stratosphere airplane compresses the air to a pressure corresponding approximately to a height of 10,000 feet. It therefore corresponds with the pressure coil of a refrigerator and is a warm aircraft. The engineering difficulties are considerable, and the penalties of explosive decompression are obviously severe—sudden exposure to an atmosphere of lunar temperature and pressure.

There is no visible limit to the speed of flight, provided the airman is protected from the wind and the flight is level and sustained. Trouble comes only from rapid acceleration and deceleration, such as arise in catapulted take-offs, tight turns at speed or crash landings, or from rapid changes in the pressure in the middle ear when the aircraft is descending at speed. One of the most remarkable observations is the entire absence of symptoms when the body falls freely in space, as in delayed parachute jumps, *i.e.*, jumps in which the parachutist allows himself to fall freely for a time before opening the parachute. The velocity ultimately reached is about 120 miles an hour. It had often been assumed in the past that man falling from a considerable height became unconscious before he reached the ground; on the contrary, he is comfortable physically as if he were resting in a hammock, and sensations of motion or air are curiously lacking.

Dr. Mathews's lectures are of special significance because they illustrate the value of co-operation between the physicist and the biologist. The physicist may calculate that an airman exposed to the centrifugal force of a tight turn may have an apparent weight of half a ton. It is for the biologist to visualize the effects of this pressure on the aorta and the vertebral column. The physicist has likewise illuminated our ideas about the mechanism of concussion of the brain and suggested better methods of prophylaxis. As man explores his enviroment in ever more fantastic ways, both through invention of mechanical devices and through the desire to work under every type of climatic condition, whether in deep mines or Arctic icefields or steaming jungles, it becomes more and more essential for the human physiologist to extend the range of his observations and to observe every aspect of the effects on the human organism of the extremes of heat, light, pressure, humidity, and so forth, and in this type of work the help of the physicist is indispensable. But many physicists would go further than this. They would say that the application of modern physical techniques to biological problems is likely to yield as rich a harvest as has already been reaped from the application of biochemistry to medicine. At present the application of physics to medicine is limited to radiology, the electrocardiograph, and the electroencephalograph in diagnosis, and the somewhat empirical use of various forms of radiant energy in treatment; but it is highly unlikely that these represent more than a fraction of the contribution physics might make to human biology.

The value of co-operation between biologist and physicist may be mutual. A sport car has been defined as a car which combines the maximum of smell and noise with the minimum of comfort. A similar type of criticism can be applied to many of the inventions of the physicist and the engineer—that they leave the human element out of consideration. It is impossible, for example, to design a nightfighter aircraft or employ it to the best advantage without knowing something about the physiology and pathology of night vision. The idea is now generally accepted, but this has happened only recently, and there are many fields of applied physics and engineering to which it still does not apply. It must be constantly emphasized that any machine or apparatus which is to be us used by men and women, whether in warfare or in industry, presents a biological problem which is at least as important as the problems of cost and mechanical efficiency—the applied physiologist must therefore be consulted through the various stages of design and application. Dr. Mathews also points out that the study of the physiological problems of the airman may yield knowledge of value in other fields. The clinical observer who has seen demonstrations of the effects on the human organism of abnormal tensions of the different atmospheric gases cannot have failed to be struck by the resemblance of the phenomena to those of mental disease. It does not seem unreasonable to suppose that morbid anxiety, depression, or elation may be due to variation in the concentrations of simple substances such as oxygen and carbon dioxide in the nerve cells, perhaps as a result of a metabolic defect or a break in a chain of fermentation reactions. In the past the study of brain chemistry has perforce had to be limited to isolated tissues or laboratory animals, but the experience which has been gained with the decompression chamber and the diving-bell suggests that similar techniques might prove fruitful in studying the psychological effects of changes in the metabolic condition of the human brain in the health and disease.

During the war physiologists, clinical scientists, and psychologists have, by the urgency of the need, been drawn to work on the personnel problems of mechanized warfare. After the war this sense of urgency may diminish, and other problems may seem more attractive. The fine quality of the research carried out by teams such as Dr. Mathews's has been largely due to the fact that applied research was being performed by workers who had been trained in fundamental methods. The resultant acceleration in the advance of knowledge can be compared with the phenomenon of hybrid vigour; it is something that can happen only once in a generation. The research worker must return to his fundamental studies and his academic teaching to renew his strength. Yet it will be disastrous for this country if research on the problems of modern warfare peters out as it did in the decades between the two wars. There is little to suggest that the needs of civil aviation are sufficient to keep interest alive, any more than the needs of peacetime motoring

LUTEOSTAB

PROGESTATIONAL HORMONE

A solution of progesterone in oil for administration by intramuscular injection in the treatment of threatened and habitual abortion and for conditions associated with a deficiency of the corpus luteum hormone.

Ampoules of 2 mg., and 5 mg.
Box of 6

ETHISTERONE-BOOTS

ETHISTERONE-BOOTS is an orally active analogue of the corpus luteum hormone, progesterone, having the same action as progesterone by injection.
ETHISTERONE-BOOTS may be employed in all cases where there is deficiency of the corpus luteum hormone.

Tablets of 5 mg., and 10 mg.
Bottle of 25

For particulars Boots *please apply to*

BOOTS PURE DRUG COMPANY LIMITED

P.O. Box 2070 CALCUTTA | P.O. Box 680 BOMBAY | P.O. Box 158 Br. COCHIN

Manufactured by:

BOOTS PURE DRUG CO., LTD., NOTTINGHAM, ENGLAND

M/17

METHYL TESTOSTERONE—BOOTS

Methyl Testosterone-Boots is a synthetic male sex hormone supplied in tablets each containing 5 mg. for oral administration. Clinical results have confirmed that Methyl Testosterone administered orally produces the same effects as Testosterone Propionate by injection. Generally, about three to four times as much Methyl Testosterone orally by weight is required, to give an equivalent clinical response, as Testosterone Propionate by injection.

Supplied in tablets containing 5 mg.
Bottle of 25 tablets

TESTOSTERONE PROPIONATE—BOOTS

MALE SEX HORMONE

Testosterone Propionate—Boots is the propionic ester of the male sex hormone testosterone, supplied as a solution in oil for intramuscular injection.

Testosterone Propionate is indicated in the treatment of eunuchism, hypogonadism and selected cases of impotence in males. It has given satisfactory results in a number of gynaecological conditions where it is desired to antagonise the action of oestrogenic hormones such as in functional haemorrhage and inhibition of lactation.

Boxes of 6 x 5 mg. ampoules
Boxes of 6 x 10 mg. ampoules
Boxes of 3 x 25 mg. ampoules

For particulars Boots *please apply to*

BOOTS PURE DRUG COMPANY LIMITED

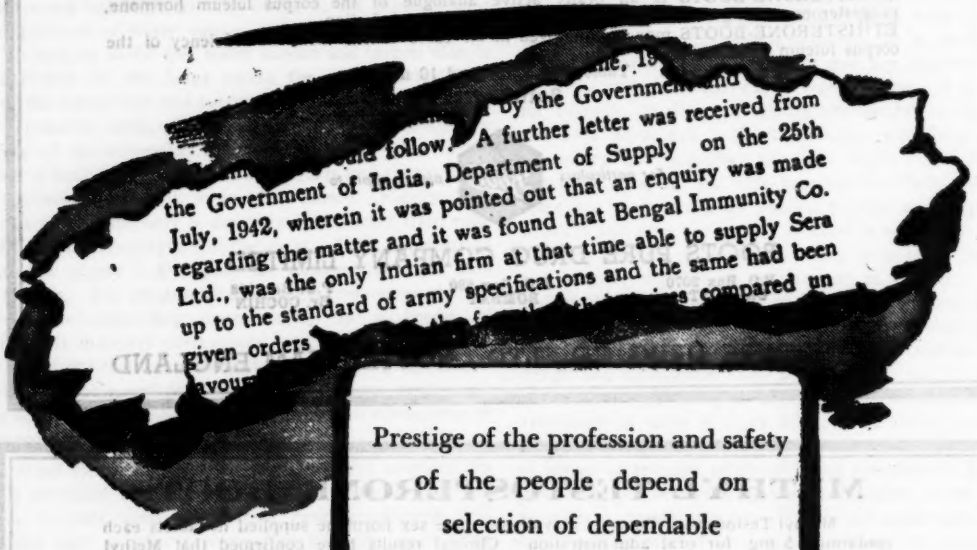
P.O. Box 2070 CALCUTTA | P.O. Box 680 BOMBAY | P.O. Box 158 Br COCHIN

Manufactured by

BOOTS PURE DRUG CO., LTD. NOTTINGHAM, ENGLAND

M/22

RECOGNISED AS *India's Best...*


by the Government
follow
A further letter was received from
the Government of India, Department of Supply on the 25th
July, 1942, wherein it was pointed out that an enquiry was made
regarding the matter and it was found that Bengal Immunity Co.
Ltd., was the only Indian firm at that time able to supply Sera
up to the standard of army specifications and the same had been
given orders
compared un

Prestige of the profession and safety of the people depend on selection of dependable brands only.

INDIA PRODUCES HER OWN AND ALSO EXPORTS

SERUM & VACCINE

BENGAL IMMUNITY CO., LTD., CALCUTTA

are adequate for the study of the physiological problems of tank warfare. Interest in Service problems can be maintained only by emphasizing their dependence on fundamental issues and their link with work in other fields. For this reason it seems essential that the medical and physiological departments of the Services should maintain active communication with the civil research institutes, the universities, and the departments of industrial health research if they are not to take up hedgehog positions in the battleground of science, where mobile warfare should be the order of the day—*Brit. M. J.*, **2**:123, 1945.

Gastrointestinal Conditions Simulating or Aggravating Cardiovascular Disease

Clark (*J.A.M.A.*, **128**:352, 1945) writes that *diaphragmatic* or *hiatus hernia* may present a clinical picture that resembles heart disease, specially coronary sclerosis with angina. And true it is that the smaller hernias that are often overlooked are most apt to give symptoms like those of cardiovascular disease. The symptoms in hiatus hernia are much more associated with eating rather than with effort. The pain is less promptly relieved with glyceryl trinitrate, belladonna and phenobarbital, 'Trasentin' or other antispasmodics usually relieve or modify the pain. *Gallbladder* disease, specially cholecystitis with stones, is not only frequently found associated with coronary disease but may reflexly initiate attacks of angina. In properly selected cases cholecystectomy may lessen or even clear up the attacks of angina for a time at least. *Functional derangement of digestion and irritable colon syndrome* may also mimic or accentuate cardiovascular symptoms.

Mercurial Diuresis

Volini and others (*J.A.M.A.*, **128**:12, 1945) report 8 cases of sudden death following intravenous injection of mercurial diuretics and give in the following lines the summary of their observations:—

1. Three patients died suddently after intravenous injection of a mercurial diuretic. One patient received mercupurim and two Esidrone. 2. Each of the 3 patients received the dose of 2 c.c. representing 200 mg. of the drug and 78 mg., and 66 mg. and 86 mg. respectively of the mercury. 3. Two patients had received prior injections of the mercurial diuretics before the fatal episode. There were no reactions to those prior injections. 4. Electrocardiographic studies are available in 2 patients with tracings shortly before and during the reactions. 5. Both patients showed the development of ventricular fibrillation following the drug. 6. In 1 patient an almost continuous electrocardiogram was obtained with lead connection 2 attached. The resulting electrocardiogram showed changes very similar to the experimental electrocardiogram reported in the anæsthetized dog, such as the changes in the ST junction and the ST interval, the intraventracular conduction deformity and changes in the T waves. 7. Ventricular tachycardia did not occur in the patient with the continuous tracing, although ventricular rhythm of a bidirectional character was noted. 8. Ventricular complexes were resumed after cardiac standstill by intracardiac injection of epinephrine. 9. Intravenous injection of mercurials should not be discontinued, but the realization of danger of their use must be ever present. This is in addition to four such possible other dangers as the dehydration syndrome, the depletion of chlorides, the disturbance of the electrolytic balance and the sudden mobilization of large amounts of digitalis from the œdema fluid. 10. The disadvantages of the other avenues of administration should be weighed against the danger of sudden death from intravenous use.

Magnesium Sulfate to Prevent Toxic Effects of Mercurial Diuretics

Pines and others (*Brit. Heart J.*, **6**:197, 1945) state that an analysis of toxic symptoms and signs which appear after mercurial diuretics proves that some of them depend on the drug itself and not on the diuresis. The mercuric ion liberated from organic mercuricals produces abundant diuresis through its action on the renal tubules, but simultaneously in certain doses, and if appearing rapidly in the blood stream of a mammal, it provokes serious distrubances in the conduction system of the heart as wells as in the musculature of the ventricles. The authors studied the course of acute intoxication produced by the intravenous or intracardiac injections of esidrome on normal dogs with the help of the electrocardiograph. They concluded from these studies that mercurial diuretics in certain doses are general depressants for the whole cardiac muscle. The following pattern of intoxication was observed: changes of T waves, intraventricular and auriculventricular conduction disturbances, diminution of frequency of impulse formation in the sinoauricular node, ventricular paraxysmal tachycardia, chaotic heart action, ventricular fibrillation and death. The addition of small quantities of magnesium sulfate (0·5 c.c. of a 20 per cent solution) prevents ventricular fibrillation and death even if doses seven times higher than normal lethal doses are used. Magnesium sulfate does not prevent and perhaps even increases the conduction disturbances resulting from the administration of lethal doses of mercurial diuretics. On the other hand, such amounts of magnesium sulfate increase the diuretic respeonse, are entirely safe and mix with mercurial diuretic without forming any precipitate. It is suggested that small quantities of magnesium sulfate be incorporated into the mercurial diuretics in order to prevent fatal reactions sometimes resulting from the intravenous injections of these drugs.

Determination of Albumin and Globulin in Human Serum

One of the limitations in the use of serum albumin and globlulin values obtained by salt faractionation is the accuracy of the methods. While the salting out methods give reliable values in normal bloods the errors of the methods are largest in abnormal blood samples, where the clinical need is greatest. Pillemer and Hutchinson (*J. Biol. Chem.*, **158**:299, 1945) recently proposed a method of determinating the albumin and globulin content of human serum with the use methyl alcohol as the reagent. They found that the globulin of human serum can be practically quantitatively precipitated by the addition of methyl alcohol in the cold at a controlled ph. The albumin remains in solution. In addition they found that the albumin, globulin and the albumin globulin ratios obtained by this method agreed favourbly with the values obtained on the same blood by the electrophoretic method. The methyl alcohol method does not require special equipment other than a cold room or an ice box. This accurate procedure is readily carried out and holds considerable promise as a tool in the investigation of blood protein concentration.—*J.A.M.A.*, **128**: 132, 1945)

Oesophageal Manifestations of Pellagra

Fisher (*Southern M.J*, **37**, 1945 Ref. *Am. J. Digest. Dis.*, **12**:180, 145) reviews the literature on pellagra from the date

XUM

of the first publication referring to the disease in 1725 to the present time. In none of the reports is there a description of lesions of the esophageal mucosa in pellagra patients. The author examined within a two year period seventeen cases of pellagra, ranging in age from twenty-four to seventy-two years. All complained of severe dysphagia. In twelve patients solid foods could not be swallowed, and of these seven could swallow liquids only with difficulty. The usual complaints of anorexia, burning of the tongue and abdominal pains accompained the complaint of dysphagia.

Each patient presented a characteristic glossitis. In many patients there was an erythematous desquamating dermatitis of the dorsum of the hands, elbows and neck. Conjunctival lesions were seen in a few cases. In each patient the mucosa of the esophagus was found to be intensely hyperemic. Oedema of the esophagus was also observed in a few. Multiple erosions or ulcerations of small size were noted in several cases. From three weeks to two months following institution of intensive vitamin therapy all patients were able to swallow without discomfort. The dermatitis and stomatitis also cleared up and the general health was improved.

Amoebiasis and Blackwater Fever

McGuire (*Indian M. Gaz.*, **80**:84, 1945) has observed during the past twelve years 33 cases of blackwater fever in Bengal Dooars, where malaria is hyperendemic. The history of these cases was always the same, namely, repeated attacks of malaria which were controlled by quinine, then suddenly the development of blackwater fever during one of these attacks after taking quinine. A popular view among the medical practitioners in the Dooars is that the causation of blackwater fever has something to do with the liver. Some workers recognize a pre-blackwater stage, which is characterized by an enlarged and tender liver. Krishnan and Pai concluded that liver damage and altered metabolism are factors in the etiology of the disease. McGuire was struck by the observation that among his 33 cases of blackwater fever there were 21, or 63·6 per cent, with the clinical signs of anœbiasis. A tender and thickened cecum and ascending colon and an enlarged and tender liver were present. Microscopic examinations of the stools showed Entamœba histolytica. Though clinical signs of amœbiasis were present in 9 cases no protozoa were found. It is possible that the amœbiasis in his series is a coincidence, but in view of the work of Krishnan and Pai it is also possible that amædic hepatitis may in some cases cause liver damage of a type that will help in the production of biochemical blood changes reported by them, especially when these patients have superimposed malarial infection. Quinine may cause further deterioration and act as an immediate excitant. The exciting cause in all the author's cases of blackwater fever was quinine. In no case did blackwater fever recur after atabrine.

Thiouracil Treatment of Angina Pectoris

Raab (*J.A.M.A.*, **128**:249, 1945) maintains that the anginal symptoms on effort, emotion, exposure to cold and the like are caused by the locally anoxiating effect of acute excess accummulation of epineaphrine and sympathin in the heart muscle whose coronary arteries are sclerotic and which is sensitized to epinephrine through the thyroid hormone. Thiouracil exerts an opposite, heart-protecting effect, obviously through suppression of thyriod hormone formation. Treatment with thiouracil proved effective in 7 out of 10 patients with angina pectoris 4 of whom became entirely symptom free during the treatment One patient was only slightly improved. Two patients remained unimproved and died from coronary occlusion. Clinical improvement coincided rather closely with the fall of metabolic rate and failed to occur in those patients whose metabolic rate did not decrease. Replacement of thiouracil by placebos without the patients' knowledge was followed by a partial or complete recurrence of the anginal symptoms, coinciding with a return of basal metabolic rate towards its former level within 10 days to 7 months following discontinuation of the thiouracil medication. The dosage ranged between 1·2 gm and 0·4 gm per day in divided doses at the beginning of the treatment to 0·1 gm daily as a maintenance dose.

Administration of Penicillin by Rectal Suppository

Loewe and Others (*J.A.M.A.*, **128**: 18, 1945) in a preliminary report point out that prolonged, effective penicillin blood levels have been obtained following the administration of penicillin by rectal suppository.

Vitamin K in Urticaria

Urticaria is the result of a sudden extravasation of fluid from the capillaries, and it may result from diverse causes. In Becker and Obermayer's classification the first group comprises localized urticaria caused by external irritants such as the sting of insects or the nettle after which the disease is named. The second group comprises urticaria produced locally in response to the action of heat, light. The third group comprises urticaria of internal origin produced by substances which reach the skin *via* the blood stream, such as foods, medicaments, inhaled allergens, or bacterial products from septic foci. The final and largest group is ascribed to "nervous exhaustion" or emotional upsets. The emotional urticarias are closely related to the second group or physical allergies, in which the patient is hypersusceptible to physical agencies such as cold. Some of the phenomena in urticaria have been closely studied by Sir Thomas Lewis and his pupils, who have related the wheals to the stimulation of cholinergic nerves and the release of H-substance. Treatment has hitherto been mainly concerned with the removal or neutralizatio of the mental or physical stimuli believed to provoke the attacks.

A quite different approach has been made by Black, (*J. Allergy*, **16**:83, 1945) who was stimulated by Howell's suggestion (*J.A.M.A.*, **117**:1059, 1941) that prothrombin and fibrinigen are constantly being formed and consumed in the blood, probably forming fibrin which in some way provides nourishment or protection for the cells of the capillary walls. Black was thus led to study the prothrombin content of the blood in urticaria and the therapeutic action of vitamin K. The study was confined to 156 patients in whom the disease was chronic and who had not obtained relief from trial diets, search for infections and allergens, or avoidance of drugs. These chronic cases represented just over half of all the patients with urticaria seen during the period of study. A diminished level of prothrombin was found in 65 per cent of the patients. In some instances the dimiuntion was notable, as the prothrombin times were twice as long as normal. It is a pity that the results were not presented in statistical form. Treatment was carried out with vitamin K by mouth, in the form of menaphthone, B.P., 2 mg. thrice daily before meals. The addition of bile salts was found to be unnecessary. Relief was obtained in more than 60% of cases. It occurred most frequently in those

Albert David's

palatable energizer and restorative

SIOTONE

contains carefully selected ingredients which promote tissue-building, stimulate regeneration of the nervous system, correct mineral deficiencies, and assist normal metabolism by their highly nutritive, detoxicating, and mildly laxative action.

Composition: Glycerophos. of sod., pot. and mang.; ferr. and ammon. citr.; cupr. glucon.; strychn. hydrochl., nuclein. acid; vit. B. compl., extr. of grapes, dates, figs.

ALBERT DAVID LTD.

Head Office: 15, Chittaranjan Avenue CALCUTTA

BRANCH OFFICES:

"Gupta Mahal", Church Gate Reclamation, BOMBAY. 2/27, Broadway, MADRAS.

ANOTHER CONTRIBUTION TO CHEMOTHERAPY

ENTERO-QUINOL

Iodochloroxyquinoline

A specific chemotherapeutic agent
For the treatment of acute and chronic Amœbic Dysentery
and Intestinal Amœbiasis.

Prepared for the first time in India in our Research Laboratory.

Issued in
Tubes of 20 tablets
of 0·25 gm. each.

For further particulars please write to:

EAST INDIA PHARMACEUTICAL WORKS LTD.
TOLLYGUNGE: CALCUTTA

"PLOI"

1. CONCENTRATED ESSENCE OF CHICKEN

An easily assimilable protein food, having a high nitrogen content. It leaves no residue and is an ideal form of protein administration to the diseased, weak and the convalescent.

2. QUINO-CINTONA

(A specific for Malaria)

Latest findings show that Chatim (Alstonia) if combined with a very small quantity of Quinine, has a far better and prolonged action than Quinine alone.

Quino-Cintona is a Chatim-Quinine combination for the treatment of benign and malignant malarias.

PHARMACEUTICAL LABORATORIES OF INDIA, LTD.
133, UPPER CIRCULAR ROAD, CALCUTTA.

patients in whom the coagulation time was prolonged. The duration of treatment varied from one to four weeks, and in many instances lesions ceased to appear after two days of treatment. Relapses occurred in about one-third of the patient but the patients were again relieved by administration of the vitamin. These are considerable claims to make for a new and simple treatment for chronic urticaria, and it will be interesting to discover whether others have the same success as Black.—*Brit. M.J.*, **2**:224, 1945.

The Uses and Limitations of Penicillin

Fleming (*J.A.M.A.*, **127**:937, 1945), the discoverer of penicillin, opened a discussion on its uses and limitations before the Medical Society of London. He stated that an important fact about penicillin was that it was not toxic to leukocytes. Ordinary antiseptics, such as carbolic acid, killed the leukocytes more readily than they killed the bacteria. Penicillin was reputed to be bacteriostatic, but it was being established that it was bactericidal as well. It must be brought into contact with the bacteria to be effective. He said that intravenous administration must be repeated because the kidney excretes penicillin very rapidly. With the standard intravenous dose of 15,000 units, most of the penicillin had disappeared from the blood within an hour. With intramuscular injection it remained for about two hours; if 50,000 units were given, for rather more than four hours; if 100,000 rather more than six hours. The intravenous drip was the most economical method but involved certain difficulties; with the intramuscular drip there was a limit to the amount of fluid which could be administered with comfort to the patient. But the subcutaneous drip served the purpose quite well. The latest apparatus for introducing the requisite amount of fluid had a small clock or motor which every hour turns a screw connected with the piston of a syringe, so that up to a million units (about ten times the ordinary dose) could be given subcutaneously in twenty-four hours without discomfort. He stated that the standard dose of penicillin was 124,000 units in twenty-four hours, given either by single injection or by drip. Fleming's clinic had been successfully using half that dose for ordinary organisms, such as the staphylococcus and the streptococcus. For less sensitive organisms the dose has been large.

Cases of staphylococcic septicæmia, Sir Alexander continued, formerly regarded as almost hopeless, invariably recovered. Gonococcic infection seemed the easiest of all to treat. The routine treatment was 100,000 units split into eight or ten doses given at two or three hour intervals.

This seemed to cure about 97 per cent of the cases. Such frequent doses were not as suitable for civilians as for men in the services. The plan was often 100,000 units in the morning and 50,000 at night. Syphilis was now being placed on the list of diseases to be treated by penicillin. A start was made with 120,000 units for a week in the usual split doses. This had been doubled, but even with the smaller dosage the spirochetes disappeared in twelve to fifteen hours. The Wassermann reaction became negative, and the patient appeared well, though in some cases there was a relapse. Penicillin was likely to be extremely successful in the mouth and respiratory tract. Nearly all the bacteria common in these regions were sensitive to penicillin; the only difficulty was to get the penicillin into contact with them. Two serious limitations of penicillin were its instability and rapid excretion. Made up in the form of solutions, ointments, creams or lozenges it was unstable. Some would say that it was a disadvantage that it could not be given by the mouth, the acid of the stomach destroying it, but that might be an advantage in preventing its abuse. Great care had to be exercised in making it up, to assure that it is bacteriologically sterile.

In reply to questions, Fleming stated that skin irritation did not often follow penicillin therapy and were never serious. The Americans had made claims for penicillin in endocarditis, but he had not much faith in short term treatment. The penicillin had to diffuse into the vegetations and it was necessary to maintain a certain concentration in the blood for a considerable period of time. As to the treatment of tertiary syphilis, he must refer the questioner to American Journals, for we had no experience of it in this country.

Ocular Complications in Small Pox

Sen (*Indian M. Gaz.*, **80**:181, 1945) is giving an account of the ocular complications of small pox seen in Calcutta during the years 1932 to 1939 observes that out of 1929 cases admitted in the Campbell Hospital Calcutta 236 had ocular complications and of these 236 cases 185 had the complication before admission and 51 had it developed after admission. Vesicle and pustule formation on the conjunctiva, sclera and cornea and subconjunctival hæmorrhage caused by small pox were responsible for 19·7 per cent of the ocular complications whereas inflammatory conditions of the conjunctiva and cornea with secondary infections and cases of keratomalacia constituted 79·3 per cent of cases. Some other conditions were also seen as exposure keratitis and perforation of the cornea with iris prolapse. This work, however, was done in the period before sulphonamides become available and it is believed that these complications could now be prevented or controlled by the routine use, in cases of small pox, of sulphonamides and vitamin A.

Honey in Treatment of Chilblain Ulcers and Wounds

Yang (*Chinese M. J.*, **62**:55, 1944) says that in the dermatology clinic of the National Medical College at Shanghai cod liver oil ointment has been used in the treatment of chronic leg ulcers and small wounds and has been found to be very effective. This success is attributed to its rich vitamin A content, which has the property of stimulating epithelization and granulation tissue formation. After the medical college was moved to Kumming in 1939 the difficulty in obtaining cod liver oil prohibited its further use. It occurred to the author that honey might be employed as a substitute, the rationale of such treatment being that, owing to its high sugar content, it is bacteriostatic; which, owing to its yellow pigment, it might be rich in vitamin A. A honey ointment was made by the addition of 20 per cent of petrolatum. The ointment was first used with encouraging results in leg ulcer. Later when the medical college was moved from Kunming to Chungking it was decided to resume the honey treatment, but, since petrolatum was not obtainable, lard was used instead. The ointment, composed of 80 per cent honey and 20 per cent lard, was used in 50 cases of chilblain, chilblain ulcers, ordinary ulcers and small wounds. Its success in hastening the subsidence of passive hyperæmia and œdematous swelling, and in stimulating epithelization and granulation tissue formation, was great. Its application is simple and convenient, and its sources of supply are plentiful, thus being especially useful under present wartime conditions.

XUM

Oral Cancer in Bombay: A Review of 1000 Consecutive Cases

Khanolkar (*Cancer Res.*, **4**:313, 1945) writes that the incidence of oral cancer in Bombay, India, was studied statistically to determine whether habits, customs, occupational pursuits, and stages of economic development are a factor to be considered. During the 30 months from March, 1941, to September, 1943, 4,765 patients suffering from neoplastic disease registered themselves at Tata Memorial Hospital, Bombay. Out of 2,880 cases of carcinoma the tumor was located in the buccal cavity in 1,000, and in over 60 per cent of those it was situated at the base of the tongue and in the tonsils. Cancer of the cheek, the floor of the mouth, and the alveolus accounted for 22·5 per cent. Cancer of the lips and anterior two-thirds of the tongue was relatively infrequent. Comparison is drawn with a report from the Memorial Hospital, New York, where cancer of the lip accounts for nearly 20 per cent of oral cancer, and contrasted with only 1·7 per cent in Bombay. In New York, cancer of the anterior two-thirds of the tongue is twice as common as cancer at the base, whereas the reverse is true in Bombay. In the Gujaratis (20 per cent of the population), cancer of the buccal mucosa is 6 times more common than among the Deccanis (about 50 per cent of the population), while cancer of the tongue is 1·5 times more common among the Gujaratis. The incidence of oral cancer in different regions of India has been attributed to the habit of betel leaf chewing. Statistics are given to show that the habitual chewing of betel leaf and areca nut alone has no etiological role in the production of mouth cancer, whereas the addition of some type of dried tobacco powder is closely associated with its development.—*Biological Abstract.*

Surgical Treatment of Malformations of the Heart

Blalock and Taussig (*J.A.M.A.*, **128**:189, 1945) give in the following lines the summary of their observations:

An operation for increasing the flow of blood through the lungs and thereby reducing the cyanosis in patients with congenital malformations of the heart consists in making an anastomosis between a branch of the aorta and one of the pulmonary arteries; in other words, the creation of an artificial ductus arteriosus. Thus far the procedure has been carried out on only 3 children, each of whom had a severe degree of anoxæmia. Clinical evidence of improvement has been striking and includes a pronounced decrease in the intensity of the cyanosis, a decrease in dyspnœa and an increase in tolerance to exercise. In the 2 cases in which such laboratory studies were performed there has been a decline in the red blood cell count, in the hæmoglobin and in the hæmatocrit reading, an increase in the oxygen content of the arterial blood, a fall in the oxygen capacity, and most significantly a decided rise in the oxygen saturation of the arterial blood.

The types of abnormalities which should be benefited by this operation are the tetralogy of Fallot, pulmonary ateresia with or without dextroposition of the aorta and with or without defective development of the right ventricle, a truncus arteriosus with bronchial arteries, and a single ventricle with a rudimentary outlet chamber in which the pulmonary artery is diminutive in size. The operation is indicated only when there is clinical and radiologic evidence of a decrease in the pulmonary blood flow. The operation is not indicated in cases of complete transposition of the great vessels or in the so-called "tetralogy of Fallot of the Eisenmenger type," and probably not in aortic atresia. It must be emphasized that the operation should not be performed when studies reveal a prominent pulmonary conus or pulsations at the hili of the lungs.

Treatment of Soft Warts with Podophyllin

Macgregor (*Brit. M. J.*, **1**:593, 1945) writes that single soft warts may be removed with success by several methods *e.g.*, caustics, curetting, ligature and galvano-and diathermy cauteries. Most of these are painful. Multiple warts are more difficult to cure, and require either special skill or special apparatus. They present particular difficult to x-ray therapy by reason of their situation and multiplicity, and also, in hairy regions, because of fear of epilation and permanent skin changes.

Podophyllin in oil is easy to obtain, simple in use, and successful in the more awkward kind of case—warts of the urinary meatus, and multiple warts of the penis, vulva, anus, and face.

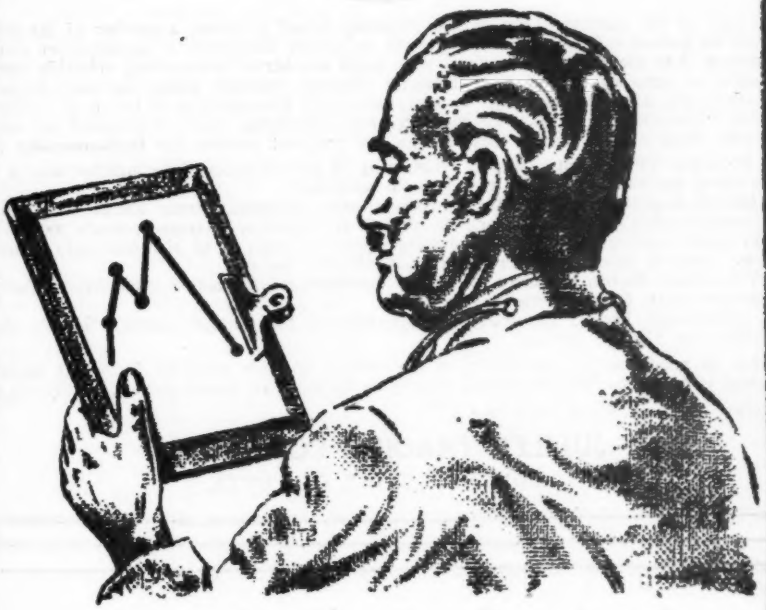
To obtain success with podophyllin thorough and prolonged application is necessary. The case of warts of the face and two cases of warts of the anus had been treated by a colleague with podophylin, on my recommendation, without success. Failure is thought to have been due to the podophyllin being absorbed into dry gauze dressings in the first instance and into underclothing in the second. Complete success was later obtained by ensuring that the oil remained in contact with the warts. The preparation used was podophyllin resin B.P. 25% in liquid paraffin B.P.

Treatment of Sprains with Ethyl Chloride Spray

Bingham (*Military Surgeon*, **96**:195, 1945) writes that the treatment of sprains and minor injuries in which the skin is not broken, by means of surface anæsthesia combined with active motion, is an effective method of therapy. The ethyl chloride spray is more advantageous than injection of procaine hydrochloride. The technic is simpler and requires no special instruments, sterilization or special surgical skill. There are no systemic after-effects and no danger of introducing injection into the injured area from the needle or skin. Large painful areas can be treated. The possible complication is frostbite, which can be prevented by application of camphor liniment to the skin after spraying. A mild reactive hyperæmia seems to improve the local circulation and is followed by a decrease in the swelling of the joint. The patients secure symptomatic relief and a return of useful function to the injured part. The immediate recovery varies from 60 to 90 per cent, depending on the severity and duration of the injury. Disability averages less than three days. No strapping with adhesive tape or the application of plaster casts is required. The treatment will not mask fractures, severe deep tissue injury or disease. In this respect it is superior to the injection of a local anæsthetic. The treatment is simple and not expensive, and disability and hospitalization are reduced.

Local Use of Sulphonamides in Surgery of Ear

Merica (*Arch. Otolaryngol.*, **41**:132, 1945, Ref. *J.A.M.A.*, **128**:54, 1945) thinks that the downward trend of disease of the mastoid process requiring mastoidectomy apparently can be attributed to the systemic use of chemotherapy in combating



Non-Specific Immune Therapy

1 to 2 cc. OPSODIN subcutaneously or intramuscularly in **fevers of obscure etiology** and all **infectious diseases like influenza, pneumonia, tonsillitis, etc.** brings down the temperature rapidly and cuts short the course of the disease by **stimulating the natural defensive forces of the body.**

OPSODIN

Cipla

CHEMICAL, INDUSTRIAL & PHARMACEUTICAL LABORATORIES Ltd.
BOMBAY—8.

XUM

The Newer Forms of Anterior Pituitary Therapy,

(THE ARMOUR LABORATORIES, LONDON)

GLANOID
MEDICINAL PRODUCTS
ANIMAL ORIGIN

The normal secretion of the Anterior Lobe of the Pituitary Gland possesses a number of far-reaching physiological properties ranging from the general inducement of body growth to specific stimulation of certain other glandular tissues. Our present knowledge, gained from the painstaking efforts of a large number of outstanding scientists enables us to prepare with a reasonable degree of accuracy a number of distinctly different fractions which we have designated as "Factors". After proper purification and accurate assaying, in accordance with the technique of Dr. J. B. Collip of the Department of Biochemistry, McGill University, Montreal, with the exception of Prolactin, which is prepared and standardised according to the method of Riddle, Bates and Dykshorn, these factors are rendered suitable for **Intramuscular** administration only.

1. "Glanoid" Polyasyn (Polyvalent Extract) containing all the hormones of the anterior lobe of the bovine pituitary gland including the thyrotropic and gonadotropic hormones.
2. "Glanoid" Growth Complex, indispensable to body growth. Assayed potency 100 growths Units (Collip) per c.c.
3. "Glanoid" Gonadotropic (Matuitary Factors, essential to reproduction. Assayed potency 300 Units (Collip) per c.c.
4. "Glanoid" Prolactin (Lactogenic Factor), producting functional activity of the mammary glands at the time of parturition. Assayed potency 100 Prolactin units (Riddle) per c.c.
5. "Glanoid" Thyrotropic Factor, necessary for proper development and function of the thyroid gland. Assayed potency 50 thyrotropic units (Rowland-Parkes) per c.c.
6. "Glanoid" Adrenoropic Factor, governing the activities of the adrenal cortical tissued. Assayed potency 10 adrenotropic units (Collip) per c.c.

"It should be borne in mind that the application of the various anterior pituitary factors is replacement therapy as far as the pituitary gland is concerned, but stimulation therapy to the male and female gonads, the thyroid and the adrenals.

For detailed literature and stock, please write to—

JUBILEE TRADING COMPANY,

14, POLLOCK STREET, CALCUTTA.

Another Quality Product of

GLOBE RESEARCH

LIVOCOD

A guard against Liver Complaints and also with curative value

Contents:—Indigenous Drugs, Hepatic stimulants with active principles of Fresh Liver Extract.

Indications:—Acute and Chronic Dyspepsia, Chronic congestion of the Liver, Fat indigestion, Bilious attacks, feeling of nausea, loss of appetite, Cirrhosis of Liver, Habitual constipation, Heart Burn, Chronic Duodenitis, etc., etc.

Issued in 4 oz. Phial

For Literatures write to:

GLOBE RESEARCH INSTITUTE LTD.,

30-A, Dharamtolla Street, Calcutta.

Delhi Depot:—Chandni Chowk, Iswari Nibas, Delhi.

acute infections. A survey of the records in three Cleveland hospitals showed that there were 153 cases in 1937 in which mastoidectomy was performed, 134 in 1938. 121 in 1939, 79 in 1940, 82 in 1941, 65 in 1942 and 35 in 1943. Thus cases in which mastoiditis required surgical intervention have been reduced to almost one fifth in six years. Sulphanilamide powder lightly insufflated into the auditory canal after myringotomy shortens the period of drainage and helps to prevent local irritation of the canal. Chronoic furunculosis of the auditory canal responds rapidly to the local use of a 5 or 10 per cent sulphathiazole ointment. During the last two and a half years the author has made it a routine practice to use sulphamilamide powder locally in ears with chronic otitis media. The type and the location of the perforation of the tympanic membrane influence the results. In the ears most amenable to treatment there usually is a large, centrally situated performation. Ears in which there is a marginal or an attic perforation, usually small, with a foul thin purulent discharge and evidence of cholesteatomatous or other debris are much more resistant to treatment. The local use of sulphonamide compounds has greatly shortened the postoperative course after simple mastoidectomy. The author believes that it is justifiable to close a simple mastoidectomy wound completely after local use of sulphanilamide. The action of the drug and the purpose for which it is used are frustrated if a drain is used. If there is no sudden unexplained rise in temperature, the dressing should be left four to six days without changing. Contamination in such wounds is always introduced from the outside. There is some difference of opinion as to the best drug to use, but sulphanilamide is probably preferable among those now available.

Syringes and Spirit

"Supposedly sterile syringes," as they were referred to in an editorial in *Brit. M. J.* some years ago, used for the injection of medicaments or immunizing agents, have on many occasions transmitted more or less serious infections. When such disasters occur they are usually attributable to faults in the technique of sterilizing or handling the syringe, and it is well known that methods in common use, although they rarely lead to any serious trouble, are imperfect and involve an element of danger, however slight. There is also much doubt and misconception about the efficacy of different methods of sterilizing syringes. A committee of the Medical Research Council has now produced a memorandum (M.R.C. War Memo. No. 15, 1945) on this subject entitled "The Sterilization, Use, and Care of Syringes." As its title implies, the treatment of the subject is comprehensive: measures to ensure sterility are the principal theme, but there are also sections on the choice of syringes and needles, the care and sharpening of needles, a method of testing syringes for leakage, the organization of a clinic for mass inoculations and the precautions necessary in employing syringes for certain special purposes, such as tuberculin tests, the withdrawal of blood for antitoxin estimations, and mass intravenous injections.

The first and most emphatic injunction is that syringes used for aspirating septic material or any possibly infected body fluid must never be diverted to an aseptic purpose, such as the injection of a sterile medicament. This is an elementary precaution, the neglect of which caused one of the notorious disasters of recent years. The clue to the efficient use of syringes is to have enough of them, and to have separate ones for these different jobs is the d uty of every practitioner. It is then urged that, as there is no known method which can absolutely be depended on to sterilize a syringe except autoclaving or exposure to a temperature of 160°C. in a dry oven, one of these methods should preferably be employed. This is to sound the deathknell of the Record syringe, since the cement at the glass-metal junctions is liable to melt at these temperatures. The memorandum does in fact strongly advocate the universal substitution for the glass metal syringe of a two-piece all-glass syringe, and refers to a British Standard Specification for such a syringe (B.S. 1263 (1945)) which is now available. The all-glass syringe has another important advantage in being much more easily cleaned; it would have no obscure crevices in which traces of its previous contents may lurk. The ideal policy is undoubtedly to have plenty of such syringes, to encase them in glass tubes, and sterilize them by dry heat. Under the heading of "A Syringe Service for a Hospital" it is advocated that in a large hospital a single department should have the care of all the syringes, cleaning, sterilizing them by this method, and re-issuing them to all wards and other users; it is mentioned that this service has existed in one hospital for some years and worked well. Boiling is given as a second-best alternative; it will not kill sporogenous bacteria unless sodium carbonate is added to the water, "but this practice is not recommended becauses the resulting alkalinity of the syringe may affect drugs or biological products to be injected." Admittedly the risk of infection by sporogenous bacteria is remote compared with that by pyogenic cocci, but it exists; and both for this reason and because a dry syringe is preferable to a wet one the method is not ideal. The hot-oil method was tested and found to be ineffective.

In order to decide whether any chemical method of sterilizing a syringe is feasible members of the committee found it necessary to supplement existing knowledge by performing *ad hoc* experiments. Their findings are that hypochlorites, phenols, chlorophenols, quaternary ammonium salts, and detergents are "ineffective as disinfectants for syringes, and may damage the material to be injected." The main reason for their inefficacy is evidently that "they cannot be guarantteed to penetrate into the crevices and corners of a syringe in which bacteria may lodge, "for the only chemical disinfectant receiving even a qualified recommendation is 70-75% V/V alcohol; and, although this sterilized a two-piece all-glass syringe when it was taken apart, it did not sterilize a glass-metal (Record) syringe under any conditions. It is, therefore, recommended that the disinfection by spirit should be confined to syring employed for and by a single patient for the injection of insulin or adrenaline. Many experiments, briefly described in an appendix, were made with spirit, syringes themselves and various other infected test objects being used before this conclusion was reached. This appendix also gives a concise but comprehensive review of what is known about the disinfectant action of alcohol, and of infections caused by injections made with syringes which spirit had failed to sterilize; these include numerous reports, mainly Continental, of cases of gas gangrene. Rereference to this appendix should provide the answer to many questions which have been asked about the suitability of spirit for various types of disinfection. The salient points are that alcohol acts best in a concentration of 75% by volume in water, and scarcely at all when undiluted; that it acts only on vegetative bacteria; that it has little power

XUM

of penetration; and that in general it is a better disinfectant than most for skin but an unreliable one where absolute sterility is necessary, as for instruments.

Further original observations on the disinfectant action of alcohol were reported in the August 4 issue of *Brit. M. J.* by G.T.L. Archer, with particular reference to its use on the skin. His findings, with six different methods, conform in general to those of previous workers. One interesting point well brought out here which should not be overlooked is that when the skin is moist-and this applies particularly to use in hot climates-undiluted alcohol is effective, and the concentration used should be not less than 80%, owing to dilution with sweat. Archer also studied the disinfectant action of ether on the skin, and found it ineffective, presumably owing partly to the rapidity of its evaporation. Ether is apparently also more active against bacilli of some species than against cocci. There is perhaps something yet to be learned even about the commonest of all everyday acts of disinfection that of the normal skin preparatory to an injection. (*Brit. M. J.*, **2**:221, 1945).

Anaemia in Pregnancy

Wolf and Limarzi (*J.A.M.A.*, **128**:482, 1945) writes that four types of bone marrow and peripheral blood patterns are observed during pregnancy:

1. A normocytic normochromic anæmia in the peripheral blood. The bone marrow shows a normal erythroid pattern with a myeloid and megakaryocytic hyperplasia toward the end of pregnancy. The physiologic anæmia is a normal state during pregnancy and is due to hydræmia. Recovery is spontaneous during the puerperium. No therapy is needed.

2. A microcytic hypochromic anæmia with a normoblastic hyperplasia in the bone marrow. Adequate iron therapy corrects the bone marrow and the anæmia. Occasionally a mild microcytic normochromic anæmia with a normal or normoblastic bone marrow is observed. No treatment is necessary as recovery follows delivery.

3. A macrocytic anæmia with a normal or pronormoblastic bone marrow. Recovery follows delivery. Iron is indicated only when the mean corpuscular hæmoglobin concentration is low.

4. A megaloblastic type of bone marrow with either a macrocytic, normocytic or microcytic and hypochromic peripheral blood pattern. Adequate liver therapy and supportive blood transfusions are needed to carry the patient through the pregnancy. Complete and permanent recovery usually follows. Atypical neutrophils (macropolycytes) in the peripheral blood are a diagnostic aid.

The most accurate criteria for the diagnosis and treatment of the true anæmia of pregnancy is the study of the sternal marrow. The changes in the peripheral blood are of a secondary nature and in many instances are misleading.

The close cooperation of the hæmatologist and obstetrician is essential to the proper management of the anæmic state seen during pregnancy.

Androgenic Therapy in Malignant Disease of Female Genitalia

Abel (*Am. J. Obstet & Gynec.*, **49**:327, 1945) directs attention to the difficulty of selecting patients for treatment with androgen because to withhold for experimental purposes any of the accepted modes of treatment to patients with early carcinoma was unjustified. Endocrine therapy had to be reserved for those patients who failed to respond to orthodox forms of treatment and for whom it was felt that nothing more could be accomplished. From 140 to 150 mg. of testosterone propionate was given by mouth every week (two 10 mg. tablets daily) or the patients were given three 50 mg. injections a week intramuscularly. The first 5 patients, including 3 with carcinoma of the cervix and 2 with carcinoma of the corpus, have been receiving testosterone propionate for ten months. Symptomatically these patients have been definitely improved. A feeling of well being, improved morale, control of menopausal symptoms and increased libido have all been regularly observed. No regression or even retardation of the malignant process was noted.

Pregnancy Complicating Diabetes

White (*J.A.M.A.*, **128**:181, 1945) writes that there are four salient abnormalities occurring in diabetic pregnancies and they are classified under four groups: maternal, obstetric, chemical and foetal. The *pregnancy abnormalities* are two: vascular disease and hypo-ovarianism. It is now well established that arteriolar sclerosis as well as atherosclerosis occurs in diabetes. Ovarian failure is indicated by an increase in the serum level of folicle stimulating hormone, by amendrrhoeas and metrorrhagias. Atrophy of the ovary with poor follicular development is the only consistent pathologic change reported in the endocrine glands other than the changes observed in the pancreas itself. The striking *obstetric abnormalities* are:—(1) the easy, early spontaneous interruption of pregnancy occurring in atleast 25 per cent of the cases (author's series); (2) the high incidence of preeclampatic toxæmia occurring in 36 per cent; (3) breach presentation in 33 per cent; (4) uterine inertia common and (5) failure of lactation in nearly 100 per cent. The *chemical abnormalities* are:—(1) the low renal threshold for glucose, (2) water retention and (3) the imbalance of the sex hormones of pregnancy. The first, if uncorrected, predisposes the patient to acidosis and if overcorrected, to insulin hypoglycæmia. Disturbance of water balance is shown clinically by the great gain in weight, visible maternal œdema, hydramnios and fœtal œdema. An imbalance of the sex hormones of pregnancy has occurred in 70 per cent of the 181 cases under review. *Fœtal abnormalities* are physical, chemical and pathologic. Physical abnormalities are: (1) over weight due to 3 distinct factors, *viz.*, obesity, œdema and splanchnomegaly, the liver, spleen and heart being specially involved; (2) congenital defects, usually involving tissue which is mesenchymatous in origin. Chemical abnormalities: on the first postnatal day respiratory, sugar and temperature regulating difficulties may be encountered and 48 hours after delivery the universal occurrence of jaundice. The pathologic abnormalities are: enlargement of the liver, spleen and islet hyperplasia.

In this series of 181 cases the imbalance of sex hormones of pregnancy appeared to be the most important harmful factor. Thus, when the hormonal balance was normal (*i.e.*, in 52 cases) the incidence of premature deiveries was zero, the incidence of toxaemia of pregnancy was 2 per cent and fœtal survival was 96 per cent. In contrast to this experience, in 38 cases in which an abnormal hormonal balance was observed premature deivery occurred in 40 per cent, preeclamptic toxæmia in 50 per cent and fœtal survival was 50 per cent.

Management—Following rules of management of the pregnant diabetic patient has been envolved: the management is diabetic, obstetric, endrocrine and pediatric.

The diabetic diet should be liberal in calories, 30 per kilogram of actual body weight, high in protein (2 gm. per kilo) and adequate in carbohydrate, upto 200 gm. daily (150 for the mother and 50 for the fœtus). Because of low renal threshold multiple small doses rather than a single large dose of insulin have been employed. Sodium chloride intake is restricted and in abnormal cases, ammonium chloride is administered.

The delivery in abnormal cases is premature, the time of choice being the latter part of the 37th or the early part of 38th week. Cæsarian section is the operation of choice. The anæsthesia is spinal and sedation is prohibited.

Various forms of endocrine therapy and various routes of administration have been used and the best and most economical is diethylstilbœstrol intramuscularly and progresterone intramuscularly and the average daily dose of each is 15 mgm.

The infant requires more than average drainage, mechanical stimulation, dehydration, heat and oxygen.

In conclusion the author writes: Maternal survival was 99·5 per cent in her series of 181 consecutive diabetic pregnancies. Fœtal survival was 84 per cent, but it varied with the occurrence of normal or abnormal imbalance of the sex hormones of pregnancy—when abnormal and uncorrected it was 50 per cent; when abnormal and corrected, it was 90 per cent and if they were normal, 96 per cent.

Crying Babies

The crying of the newborn baby is a universal negatively directed reaction—a reflex act to unpleasant stimuli. Aldrich and his associates (*J. Pediat.*, **26**:213, 1945) who studied the crying of newborn infants in a maternity ward nursery, say that good management reduces this crying to a minimum. Evaluation of the pediatric and nursing routines in answering the needs of the newborn infants is a realistic approach to determining causes and means of reducing the amount of crying. The average baby cries one hundred and thirteen minutes a day in the nursery. This is more than should be necessary for the normal use of the cry as a signal of need. The peaks of crying during a twenty-four hour period were found to correspond exactly to the periods when nursing care was at its lowest. The calmest hour of the nursery day occurred at 10 a.m., when the nursery was fully staffed, all babies had been fed and the smaller needs of the infants were more completely satisfied. The hours of most crying were from 10 p.m. on through 2 a.m., at which time there were only two student nurses in the nursery, with thirty babies to care for. Other peaks of crying are explained by adjusting feeding schedules in the nursery to routines of the obstetric ward—visiting hours and supper hours. Crying does not appear to be contagious from one baby to another. The chances are less than 0·14 per cent that more than half of the babies in the nursery will be crying simultaneously. The study indicates that pediatric and obstetric routines, the distribution of nurses through day and night in the nursery, should be adjusted to the community needs of the infants. Other factors, such as the color and lighting in the nursery, the type and nature of babies' clothes and the positions of the babies, may be investigated as contributing to the babies' comfort—*J.A.M.A.*, **128**:367, 1945.

Periosteal Lesions in Scurvy

Evans (*Am. J. Rœntgenol. & Rad. Therapy*, **53**:147, 1945 Ref. *J.A.M.A.*, **128**:233, 1945) reviewed roentgenograms of cases in which the diagnosis of scurvy had been made at the children's Hospital of Michigan during the years 1936 to 1941. During this six year period in a hospital service comprising 106,800 new outpatient visits and 41,773 hospital admissions 93 cases were encountered, indicating that even in these days of vitamin consciousness infantile scurvy is not rare. It occurs almost exclusively in the narrow age range of 7 to 15 months. The most advanced lesions were usually seen in the knees, followed by the shoulder and ankle joints, and then by the wrist, hips and elbow joints The earliest changes represented by the ground glass type of demineralization of the bone structure and by the signet ring appearance of the epiphyses are seen with great frequency but are not of sufficient to be regarded as pathognomonic of scurvy. The signet ring appearance was most pronounced in the epiphyses at the knee joints and was present in the same degree in all of the cases. The ground glass appearance was seen less constantly (74 per cent) and was absent particularly in cases complicated by rickets. The submetaphysial notch, emphasized by Park and his colleagues as the earliest pathognomonic sign of scurvy in the x-ray examination, was observed in 89 per cent of the 93 cases. Periosteal shadows in scurvy were observed to be of two types. The first appears as a narrow triangular shadow having its base at the metaphysis and extending from there for some distance along the shaft. The second type of periosteal shadow is much larger, is usually club shaped and extends along the greater length of the shaft. The periosteal lesions of scurvy depend for their occurrence, location and severity on the severity of the lesions which develop in the metaphysial areas of the long bones.

Whooping-Cough Vaccine

McFarlan and others (*Brit. M. J.*, **2**:205, 1945) in reporting to the Medical Research Council gives in the following lines the summary of their observations on whooping cough vaccine:

Over 600 susceptible children of 6 months to 3 years of age attending welfare clinics and wartime day nurseries in Oxford City, and 110 evacuee children of 6 months to 3 or 4 years of age distributed in eight residential nurseries in Oxfordshire, Berkshire, and Buckinghamshire, were divided into "inoculated" and "control" groups by methods designed to render the two groups similar in every respect other than inoculation.

The inoculated children were given either two doses of pertussis vaccine at a 4-weeks interval, or four doses at intervals of 1, 1, and 4 weeks. The total dosage ranged from 40,000 to 100,000 million organisms, corresponding to an American dosage of aout 120,000 to 300,000 millions.

Whooping-cough occurred sporadically in Oxford City during the succeeding 18 months, and broke out in four of the residential nurseries 2 weeks to 9 months after the last inoculation.

No significant difference was oserved in the incidence or severity of whooping-cough between the inoculated and the control children. In Oxford City 12·5% of 327 inoculated and 14·1% of 305 control children developed definite whooping-cough. In the residential nurseries the corresponding figures were 55% of 33 inoculated and 63% of 30 control children.

The evidence obtained from this investigation lends no support to the view that pertussis vaccine is of value in the prophylaxis of whooping-cough; and it is suggested that the use of this vaccine should be discontinued till some positive evidence of its value is obtained in further carefully controlled trials.

XUM

NOTES & NEWS

CASE AGAINST PRACTITIONER UNDER DRUGS CONTROL ORDER, 1943.

On 2-8-45 Dr. A. Shakur, L.R.C.P., L.R.C.S. (Edin), L.R.F.P.S. (Glasgow), President, Indian Medical Association, Dinapore Branch, appeared through a lawyer in the Sub-Divisional Officer's Court in order to show cause why he should not be prosecuted for doing "unauthorised business" without renewing any of the Drugs Control licences.

The following is a summary of the interesting passage-at-arms that took place between the Court and Mr. A. Gupta, pleader on behalf of Dr. Shakur.

Court—Your client had a Retailer's Licence as well as a Purchaser's licence last year?

Mr. Gupta—Yes, that is so.

Court—Why has he not renewed any of the two this year?

Mr. Gupta—Being a private medical practitioner dispensing some medicines in loose quantities to his patients only according to his own prescriptions, my client does not consider himself to be a retail dealer and as such he has not applied for a Retailer's Licence this year.

Court—But why did he obtain it last year?

Mr. Gupta—My client did not know his rights then. Last year a deputation on behalf of the Indian Medical Association waited on the Central Government and only after that one could obtain a clear picture as to the special rights of a doctor *vis-a-vis* the Drugs Control order. *In fact, the I.M.A. has now issued a circular calling upon all doctors throughout India not to take out a Retailer's Licence which is derogatory to the self-respect of a doctor. My client being the President of the local branch of the I.M.A. could not possibly go against the positive mandate of the I.M.A. Head Office.

Court—But your client keeps a large stock of drugs in his dispensary without a Retailer's Licence. Can I not prosecute him for keeping drugs in excess of his personal needs?

Mr. Gupta—The relevent words are "in excess of normal requirement".

Court—It is the same thing as personal requirement.

Mr. Gupta—No, it is not. Normal requirement for a layman might be equated to his personal and family needs. But for a doctor it means his normal professional needs.

Court—I am not sure of the correctness of this interpretation. I think that anybody not possessing a manufacturer's, importer's or wholesaler's licence or at least a retailer's licence can be prosecuted under section 12 if he keeps drugs in quantities in excess of his personal needs.

Mr. Gupta—The amended Drugs Control Order does not compel a doctor to take out a Retailer's Licence. Only a Purchaser's Licence is recommended for doctors, that is all.

The Court made a reference to the Drugs Control clerk who also supported the view that a doctor was under no obligation to take out a Retailer's Licence, adding, however, that a doctor could not run a dispensary without a Purchaser's Licence.

Court—Yes, let your client renew his Purchaser's Licence only and I shall be satisfied.

Mr. Gupta—If my client has not renewed his Purchaser's Licence, he has not purchased medicines from a wholesaler either. How does he contravene the Drugs Control Order then?

Mr. Gupta then read out certain Government notifications quoted in an I.M.A. circular (No. C—13/43-44 dated 17-1-44) where it has been said that "Any person who desires to purchase from a wholesaler must obtain a Purchaser's Licence".

"The obvious corollary", added Mr. Gupta, "was that if a doctor did not wish to buy his requirements from a wholesaler, he need not obtain a Purchaser's Licence".

Court—Where will your client then buy his requirements from?

Mr. Gupta read further quotations (I.M.A. Journal, March, Supplement) which said that a doctor could purchase controlled drugs from a retail shop either for his personal needs or for the needs of his patients.

"I do not think that this position has been altered by the latest amended Drugs Control Order", contended Mr. Gupta.

At this stage the Drugs Control clerk whipped out a copy of Circular No. 3286/Drug 1/15 P.C. (Misc), issued by the Supply and Price Control Department of the Bihar Govt. which read as follows:—

"Purchaser's Licence will not now be needed by manufacturers, importers, wholesalers or retailers who have taken out general or restricted licences in Form A1, A2 or A3.... Purchaser's Licence will now be taken by doctors and others who do not possess above licences."

The Drugs Control clerk claimed that this latest circular had overuled the older circulars, if any, and that a Purchaser's Licence *must* now be taken by doctors.

Mr. Gupta—I protest against this absurd interpretation. Even if for a moment it be supposed that the Bihar Govt's circular really bears the meaning imputed to it, I submit that the idea of a Provincial Govt. overruling the orders of the Central Govt. is too ridiculous to merit serious consideration.

The Court finally asked Mr. Gupta whether the I.M.A. had issued any ban against the Purchaser's Licence too.

"No", replied Mr. Gupta, "But my client is not sure that it is obligatory for him to obtain a Purchaser's Licence even when he has no occasion to buy anything from a wholesaler. He is, however, waiting for further instructions from the I.M.A. authorities. If they advise my client to take the licence, most certainly he will. But if they advise that there is no such obligation, then my client will fight out the case as a matter of principle."

"In that case," added Mr. Gupta, "It would not merely be a fight between an individual and this Court, but it will be taken to a much higher level where the fight will be between the I.M.A. authorities and the Central Govt. at New Delhi."

The hearing was adjourned till 14-8-45 and the following order was passed:—

"Let the doctor swear an affidavit to the effect that he does not buy drugs from the wholesalers, importers or manufacturers or in black market from the same and that he keeps the stock for his normal requirements only."

Meanwhile Dr. A. Gupta, M.B., B.S., Secretary, I.M.A., Dinapore Branch, ascertained the opinion of Capt. H. N. Shivapuri, I.M.S. (Retd.), I.M.A.'s expert on Drugs Control laws, who was emphatic in his view that Dr. Shakur could not be lawfully prosecuted under the Drugs Control Order. Capt. Shivapuri at once moved the Central Govt. as well as the Bihar

*As was pointed out later by Capt. H. H. Shivapuri, I.M.S. (Retd.), it was he who, as the Secretary of the U.P. Provincial I.M.A., had moved the U.P. Govt. and the Central Govt. in this matter.

Govt. on behalf of the I.M.A. demanding immediate withdrawal of the case against Dr. Shakur.

On 14-8-45 Dr. Shakur personally appeared in court and swore an affidavit which in effect showed that Dr. Shakur was running his dispensary strictly in accordance with the terms as contained in Circular no. 475-C.S.(D)(38)/44, dated 17-2-44, of the Under Secretary to the Govt. of India, Department of Industries and Civil Supplies. It was the defence case that compliance with the terms of the said Circular exempted a doctor from taking out any of the Drugs Control Licences. Orders were reserved.

On 21-8-45 it was learnt that the case against Dr. Shakur had been quietly dropped. Presumably Capt. Shivapuri's representation to the Central Govt. and the Bihar Govt. had the desired effect at last.

This is the first case of its kind in Bihar and a precedent has now been established that a doctor can dispense medicines in loose quantities to his own patients without a Retailer's Licence and can buy his professional requirements from a retail shop without a Purchaser's Licence. Dr. Shakur has shown his mettle in fighting out his case and he has succeeded in establishing a principle which will now benefit all his fellow doctors. The I.M.A. authorities and their legal expert have earned the gratitude of the members by taking prompt and effective steps for safeguarding the prestige and privileges of the medical practitioners.

Note.—The above report was prepared by Dr. A. Gupta, Secretary, Dinapore Branch, I.M.A. who has omitted from the law court proceedings a great deal of matter which in his judgment was somewhat irrelevant or such as ought not to appear in print.—Ed.—*J. Indian M. A.*

UNIVERSITY OF MADRAS

The Council of Post-Graduate Medical Education of the University of Madras is arranging during January to March 1946, courses of lectures (not less than 20 in each) in Medicine, Surgery, Obstetrics and Gynaecology including recent advances in Pathology and Bacteriology, Ophthalmology and Oto-Rhino-Laryngology. The courses are intended for the benefit of medical practitioners preparing for higher degrees and diplomas and are open to any registered medical practitioner of the allopathic system of medicine. The fee for the full course is Rs. 100/-, or Rs. 50/- for attending lectures in any one subject only.

The Council is also arranging, during the name period, *Refresher Courses* in Medicine, Surgery, Obstetrics and Gynaecology, for the benefit of the general medical practitioners. The course in each subject will be of two weeks' duration and will consist of bedside clinics, demonstrations of specimens etc., & attendance at operations, whereever possible. The fee for the course will be Rs. 100|- for the whole course or Rs. 50|- for any one subject. The courses will be conducted in the Madras City Hospitals. Any practitioner who enrols for the whole session on payment of Rs. 100|- will be permitted to attend all the courses arranged by the Council.

COLLEGE OF PHYSICIANS AND SURGEONS, BOMBAY

The following condidates have passed the Examination for the Diploma in Child Health (D.C.H.) held in October, 1945:—

Mehta, Sushila Himatlal (Miss)., Salpekar, Manohar Keshao.

INDIAN SCIENCE CONGRESS

The 33rd annual session of the Indian Science Congress will be held at Bangalore from 2nd to 8th January, 1946, at the invitation of the Mysore University. Prof. M. Afzal Hussain will preside over the session.

Thirteen different sectional meetings will be held. Some of the Sectional Presidents are as follows:

Botany: Dr. B. P. Pal, Imperial Economic Botanist, New Delhi. Zoology and Entomology: Dr. M. A. Moghe of Nagpur. Medical and Veterinary Services: Rai Bahadur Dr. K. N. Bagchi, Chemical Examiner to the Government of Bengal, Calcutta. Physiology: Mr. P. De, Medical College, Calcutta. Psychology and Educational Science: Dr. Indra Sen, Hindu College, Delhi.

Prof. M. Qureshi and Prof. P. C. Mahalanobis have been elected General Secretaries and Prof. H. Subba Jois and Dr. C. S. Pichamuthu, Local Secretaries.

KASTURBA TRUST

The second meeting of the Executive Committee of the Advisory Medical Board under the Kasturba Gandhi National Memorial Fund Trust was held on 9-9-45 at Dr. Dinsha Mehta's Nature Cure Clinic.

Dr. Jivraj Mehta presided, Drs. M. D. D. Gilder, B. C. Roy, Chamanlal Mehta, B. C. Dasgupta and Sushila Nayar, members, were also present and Drs. Gajjar and Dinsha Mehta were present by invitation.

The Committee considered the report of Dr. M. Haskar who had been deputed to inspect Seth Tarachand Charitable Ayurvedic Hospital, Poona, and decided to recognise it as a centre for training nurses and midwives, according to the syllabus prepared by the Advisory Medical Board of the Trust, provided a suitable hostel was available for the residence of the pupil nurses and midwives under training.

The Committee also gave recognition to the Kasturba Gandhi Maternity Home in Adyar as a centre for training midwives. It was recommended that the Trust should give grants to the institutions recognised for training at the rate of Rs. 30|- per candidate per month.

Consideration of the recognition of the Kamala Nehru Hospital, Allahabad, and the Gosha Hospital, Bobbili, as training centres was postponed, pending the reports of Shri Mridulaben for the former and Shri Thakkar Bapa and Dr. Gurubatham for the latter.

The Central Office of the Trust had asked the Board to prepare a model list of equipment and budget and a model building plan for a small rural maternity centre. Dr. Sushila Nayyar had prepared a list which was entrusted to a committee consisting of Dr. Chamanlal Mehta and Dr. Dasgupta with a request to put up detailed proposals with blue prints for the same.

The Committee also considered a proposal for a six-months course for the training of Dais but in view of the very unsatisfactory results of the efforts at such training in various parts of the country, the Committee disapproved the institution of courses under the Trust for such training.

The Committee approved of Shri Mridula Sraabhai's suggestions that candidates for training in midwifery and general nursing should first go through a preliminary rural camp training of three months so as to acquaint them with the aims and objects of the Trust and the circumstances which they

will be called upon to tackle when they go to work in the villages.

The Committee suggested that, during this period, besides general knowledge, the trainees should learn spinning, sewing, tailoring, cooking, physical exercise, cleaning the latrines and should also cover the syllabus of first aid and home nursing prepared by the Advisory Medical Board.

Gandhiji had referred to the Committee the question of the cholera epidemic now raging in C. P. Recommendations were made with regard to preventive and curative measures. It was also recommended that Dr. Sushila Nayyar should go to Wardha and meet local medical practitioners with a view to seeking their assistance for organising medical relief in the villages round about Wardha.

Gandhiji had also referred to the Committee the acute water shortage in some parts of Maharashtra, especially Konkan. The matter is being looked into.—*Eastern Express.*

DRUG CONTROL ADVISORY COMMITTEE, BOMBAY

Extract from the minutes of the 3rd meeting of the Provincial Drug Control Advisory Committee held on 5-9-45 in the office of the Commissioner of Excise, Old Custom House, Bombay.

Item 2 of the Agenda, namely the discontinuance of the purchaser's licence for the doctors was taken up for consideration:

Dr. Chamanlal M. Mehta, President of the Bombay Medical Association explaining his proposal said that the drugs in short supply were very few and as such there was no need to control the distribution of the drugs. He explained that the circumstances under which the medical profession had originally agreed to take out a purchaser's license did not exist now and suggested that doctors should be exempted altogether from the degradation of taking out a purchaser's license or permit. The end of European war had materially altered the circumstances and now the import of drugs is safe and there is not likely to be any short supply of drugs. The fact that doctors are registered should be sufficient to justify the grant of the privilege of getting drugs without licenses. In addition he protested against the fee of Rs. 15|- for the purchaser's license which was considered to be a sort of professional tax. He therefore urged that doctors should not be expected to take out purchaser's permits especially as they were usually given complimentary discount even by retailers and could invariably rely on the importers to supply them with drugs which were in short supply.

Dr. Velkar, representative of the Bombay Medical Union, supported the proposal made by Dr. Chamanlal M. Mehta, but said that the doctors who rendered humanitarian services to the public should have free access to importers by means of the Purchaser's permit, but the latter should either be free of license fee or at least be at reduced fee but that in any case the privileges must remain. The Surgeon General opined that the situation regarding stocks of imported drugs had improved of late and that it may further improve on release of stocks by the Military. There was a lengthy discussion on the proposal during which Col Sokhey pointed out that the doctors' business was more or less a trade and here it was suggested that the license may be altered (as discussed before the Central Drugs Control Advisory Meetings) into a permit and that the license fee be reduced to a nominal fee of Rs. 5|- or lower. Dr. Velkar said that Doctors should be exempted from payment of any fees, but yet should exercise all the existing privileges. Mr. Feith explained in short what had taken place at the meeting of the Central Drugs Control Advisory Committee and Dr. Hamied who attended the meeting gave the members to understand that the proposal was likely to find favour at the next meeting of the committee, if it was recommended by the provincial committee. He added that the Central Committee was likely to hold its next meeting some time in November next. The discussion then centred round the privileges of doctors and it was argued that they should be able to get drugs from importers and manufacturers also. Col. Sokhey however appeared to favour the view that doctors should be placed in the same position as any one else and therefore the Purchaser's license should be discontinued. Mr. Hukmichand Vassanji expressed the opinion that when the stock position is so easy as at present everybody will go to the doctors instead of their having to go to the retailers for their drugs. Mr. Branble supported the proposal, while the Surgeon General advised that it may be recommended with modification that the whole question be left for the consideration of the Government of India in the light of the present conditions.

The Chairman summing up the views of the members suggested that the proposal would be recommended as the majority was in favour.

WAR TIME HOSPITAL IN INDIA

Dr. B. C. Roy, President, Indian Medical Council, has issued the following statement:—"The appeal issued by Pandit Nehru to the Army authorities, particularly the Americans, for handing over hospital appliances, equipment and buildings set up for military purpose to civilian use is a timely one in view of the great need for hospital accommodation in this country, a need for which was emphasised by the members of the public and the practitioners alike who appealed before the Bhore Committee at different parts of the country.

In view of paucity of beds as far back as October, 1943 the Health Survey and Development Committee of which Sir Joseph Bhore is the Chairman requested the Government of India to take steps immediately on cessation of the war to utilise the so-called temporary hospitals erected for military personnel in order that the civilian population in the country might be benefited. The Committee at its sitting recently reiterated this request. I join to the appeal of Pandit Nehru to the Governments in India and the U. K. and U.S.A. army authorities concerned to take immediate steps now that the hostilities are at an end and ensure utilisation of the existing buildings which had been built up for the war purposes for civilian use and that the equipment and appliances therein to meet civil health requirements at an earliest possible moment."—*A. B. Patrika.*

A DISTINGUISHED MEDICAL WOMAN

Dr. Janet M. Vaughan, a well known hæmatologist, whose book "The Anæmias" is in its second edition, has been appointed principal of Somerville College (a Women's College), Oxford, Dr. Vaughan is medical officer in charge of the North West London Blood Supply Depot for the Medical Research Council. She was an undergraduate of Somerville College and took a first class in physiology in 1922 and her D.M. degree in 1930. She has been a Rockefeller fellow, a Beit memorial fellow and a Leverhulme fellow. She has held the post of assistant patho-

XUM

logist at University College Hospital, and the British Postgraduate Medical School. She was a member of the Interdepartmental Committee on Medical Schools and is member of the Royal Commission on Equal Pay for Women and of the body appointed by the government to investigate public health in India.—*J.A.M.A.*

BICENTENARY CELEBRATION OF THE ROTUNDA HOSPITAL

The Rotunda Hospital, Dublin, was founded in 1745 by a physician, Bartholomew Mosse, and is the oldest maternity hospital in the British Isles. Its fame as a teaching centre is widespread, and students come to it from all over the world. Its bicentenary falls this year, but, in consequence of the disturbance produced by the war, celebration is deferred until the second week of July 1947, when an International Congress of Obstetrics and Gynæcology will be held in Dublin, primarily under the auspices of the Rotunda Hospital but with the cooperation of the other two Dublin maternity hospitals. The principal subjects contemplated for discussion are eclampsia, sepsis, obstetric shock, fætal mortality and the modern approach to the problem of sterility.—*J.A.M.A.*

ANTIMALARIA MEASURES IN INDIA

In the annual report of the Ross Institute of Tropical Hygiene, India Branch, for the year 1942-43 mention was made of a summary by Dr. G. C. Ramsay of antimalaria measures that had been found effective in North-Eastern India. In the report for 1943-44 (office of the Committee of Control, Royal Exchange, Calcutta) this summary has been brought up to date in the hope that it will serve the useful purpose of its predecessor in describing and illustrating the progressive antimalaria measures which the Ross Institute is able from experience to commend for adoption by subscribing interests, by the armed forces, and by others concerned in the control of malaria in this region. Among such results of special experience stressed in the present report is the danger of surface drainage as an antimalaria measure where the vector species are *A. minimus* and *A. fluviatilis*. These species favour above all for their breeding places small sluggish streams or watercourses. An open drain may thus create an even more dangerous breeding-ground than the original swamp, which may have been relatively harmless because of covering vegetation. Again, drains effective when first made are apt to become dangerous by growth of grassy edges or other changes which occur in the course of time. Hence, as the report emphasizes, in the areas where A. minimus and A. fluviatilis are the chief carriers surface drainage should be so far as possible minimized, and where drains are necessary they must be constantly controlled by weeding, canalization, oiling, shading, flushing, herbage packing, or lining with cement. The use of shade over drains continues to be one of the most important measures, and attention is drawn to the "beehive" or "pent-house' pruning now being adopted in some districts. This gives the maximum amount of foliage thereby further reducing the possibility of grass or weeds becoming established in the channels. Flushing by automatic siphon continues to grow in importance as a method of control, and some estates in South India formerly hyperendemic are now practically free from malaria owing to flushing measures. Some remarks are made in regard to misconception as to the practical limits of this method, which are by no means confined to small installations. The serious danger from irrigation, hydro-electric schemes, construction of railways and roads, and other sources of man-made malaria arising from engineering works is stressed and the suggestion made that engineers should receive training in antimalaria work. Though the report is commendably modest in size it is a most useful and helpful publication, and should be closely studied by all who are engaged in antimalaria work in these regions.—*Brit. M. J.*

A NEW INSECTICIDE

In a lecture to the Society of Chemical Industry, Dr. Roland Slade of Imperial Chemical Industries announced the discovery of a remarkable new insecticide with a wide range of uses, gammexane, which is the gamma isomer of benzene hexachloride ($C_6H_6Cl_6$). This was isolated early in 1943 and was found to be more toxic to weevils than any substance previously tested. There is every indication that it is much more toxic in locust baits than anything used heretofore. It has numerous medical, veterinary and agricultural uses. Experiments in the field against wireworm have led to the hope that we have found at last a means of fighting this pest, which causes the failure of so many farmers crops in Britain. Gammexane has proved highly toxic to lice and fleas. Dusts, sprays and paints have been used experimentally on the surfaces of rooms and rendered them toxic to any flies that walked over them.—*J.A.M.A.*

MRS. T. WELLS FUND, I.M.A.

The following further contributions to the fund have been received:

1. *Bijnore Branch*: Drs. H. N. Gupta Rs. 5|-; Kishan Chandra Rs. 2|-; B. L. Agrawal Rs. 2|-; C. L. Sahi Rs. 2|-; B. S. Gupta Rs. 2|-; M. H. Zafar Rs. 2|-; H. A. K. Lodi Re. 1|-. Total Rs. 16|-.

2. *Gujranwala Branch*: Drs. Surindro Nath Rs. 10|-; Siri Chand Rs. 2|-; Kasuri Lal Rs. 5|-; Ghulam Haidar Rs. 5|-; Jaswant Rai Rs. 5|-; Des Raj Arora Rs. 5|-; Mohindar Singh Rs. 2|-; Girdhari Lal Rs. 5|-; Ladha Singh Rs. 5|-; Hans Raj Rs. 5|-; Jamiat Singh Rs. 5|-; Tara Chand Rs. 3|-; Hassan Ali Rs. 2|-; Des Raj Bhasin Rs. 5|-; Nand Lal Rs. 3|-; Fazal Hussain Rs. 5|-; Kirpal Singh Rs. 3|-; Mahraj Kishan Rs. 5|-. Total Rs. 80|-.

3. Dr. A. K. Chakraborty (Calcutta) Rs. 10|-.

4. *Kishanganj Branch*: Rs. 20|-.

5. *Bulandshahr Branch*: Drs. H. N. Beri Rs. 10|-; S. L. Rajora Rs. 5|-; Ratanlal Khanje Rs. 2|-; Gauri Shanker Gupta Rs. 2|-; Anand Swarup Sharma Rs. 2|-; Makhanlal Sharma Rs. 2|-; Siri Krishna Bhatnagar Rs. 2|-; Chunilal Sharma Rs. 2|-. Total Rs. 27|-.

6. *Lahore Branch*: Drs. E. P. Bharucha Rs. 25|-; Devi Chand Gupta Rs. 5|-; R. L. Dongrey Rs. 5|-; V. D. Mallick Rs. 5|-; Khushi Ram Joneja Rs. 5|-; Udhan Singh Rs. 10|-; Gyan Chand Bajaj Rs. 5|-; T. N. Bhan Rs. 5|-; A. P. Khullar Rs. 10|-; Raghu Nath Sahai Chawla Rs. 5|-; M. L. Aggarwal Rs. 5|-; Rao Bahadur Dr. Ganesh Das Kapur Rs. 16|-; Drs. K. Manohar Rs. 10|-; Ram Labhaya Mullick Rs. 5|-; Gopal Das Jain Rs. 11|-; Om Parkash Khosla Rs. 25|-; J. C. Chugh Re. 1|-; Kundan Lal Chadda Rs. 10|-; Mohd. Abdul Haq Rs. 30|-; Gulzari Lall Rs. 25|-; Prem Nath Rs. 10|-; Capt. R. C. Gulatia Rs. 21|-; Major Uttam Singh Sidhu Rs. 25|-; Drs. Raja Ram Nayar Rs. 5|-; Baldev Singh (of Lahore) Rs. 10|-; Dina Nath Bhatnagar Rs. 10|-; N. C. Dey Rs. 5|-; Amrit Monga Rs. 5|-; Krishen Lal Khorana Rs. 5|-; Ganeshi Lal Aggarwal Rs. 11|-; Capt. R. Chand Rs. 21|-. Total Rs. 346|-. Grand Total Rs. 499|-.

XUM

CORRESPONDENCE

The Editor is not responsible for any views expressed by contributors.

FUTURE OF INDIAN MEDICAL OFFICERS IN THE PRESENT WAR

SIR,—Regarding the future of Indian medical officers who have been away On Active Service for a certain number of years, and will probably come back to find no future as certain others of us found in 1919 at the end of the last Great War, and for whom reasonable and remunerative worth must be obtained, I would put forward the following proposals:—

1. All civil hospitals to have an increased staff whereby patients might have attention at all times of the day and night (advantage to be taken of those nurses who have had experience of the A.N.S. to continue their services under government).

2. Government should arrange as a temporary measure, for villages to be supplied with doctors and nurses on a scheme similar to that developed in Scotland under the Highlands and Islands Scheme, whereby an annual salary was granted plus scale of fees for those who could afford it plus mileage allowance. This scheme worked well on the whole.

3. Refugee practitioners who have fattened at the expense of the humbler during war should be returned to their homes.

4. Medical Associations should be more powerful in carrying out their local laws of medical ethics and refuse to deal with quacks who are allowed to advertise themselves in papers and telephone directories as specialist in all sorts of multifarious diseases. Therefore no person should be allowed general practice until he fulfils the requirements of the medical registration acts of the various provinces. At the same time I would suggest that so called consultants and specialists should not do any general practice.

These are only temporary measures, which can be carried out, prior to the day, when under a properly established local and central government we as a body of medical men can develop a complete scheme of National Health Insurance or a system of preventive medicine. This will cost money but it can and must be found. I am etc.

7-9-45 RICHARD A. BARLOW,
Savoy Hotel, Mussori. B.SC., M.B.Ch.B., F.R F.P.S.

DOCTORS FOR ATTENDING ON MEDICAL PRACTITIONERS AND THEIR DEPENDENTS

SIR,—It is a matter of deep regret that when a doctor falls ill or his nearest dependents fall ill, it becomes almost impossible to get any expert medical attendance. I shall give a few concrete examples:—

1. My son got erysipelas and I tried to get a doctor to attend on him at night while the child was geeting very high temperature and convulsions. One surgeon advised me on the telephone to put him on bromides till next morning and he might come and see him at 1 p.m. next day after his hospital hours.

2. One of my relatives who was also a medical practitioner died of cerebral hæmorrhage only a month back and his relatives and friends tried to get a doctor to attend on him, and offered any amount for his fees but failed to get any medical attendant till the last day when I managed to get one kind hearted doctor who was known to him from his childhood. Some of the doctors flatly denied to go, others put up a long date and one was ready to go for a fee but that also after 2 days.

3. Another doctor who is at present lying ill with cerebral thrombosis—a much respected doctor of Calcutta—who can claim most of the practitioners of Calcutta to be known to him—is practically going without any medical help. He is lying in a pitiable condition and out of regret he does not call any doctor now.

Taking similar examples, do you not think that it should be made an absolute rule that all the medical practitioners must charge their fees for attending on fellow practitioners and their relatives. Even if we have made a mistake in choosing this profession why should our innocent children and relatives suffer for it and go without treatment? The reason cannot be anything but money and if with all the money we earn we cannot get adequate medical relief we should better not call ourselves doctors. I am etc.

Calcutta, 15-9-45 S. K. Das.

REVIEWS

HAND-BOOK OF PRACTICAL BACTERIOLOGY—By T. J. Mackie and J. E. Mccartney. 7th Edition, 1945. Pages viii+720. Royal 8 vo. Published by E. S. Livingstone, 16 & 17 Teviot Place, Edinburgh.

There is hardly any need of stressing the growing importance of bacteriology in recent years specially with reference to better laboratory technique, more improved ideas on Immunity and the rapidly increasing stock of chemo-therapeutic drugs and antibiotic products of fungi and bacteria that hope to revolutionise the treatment of bacterial infection in course of a short time. As a successful exponent of the subject the present volume has already caught the attention of the student and the bacteriologist alike and does not require a fresh introduction. I cannot think of any laboratory worker who can do without this book. This latest edition is fully abreast of all recent developments that have been incorporated in the Appendix. The volume is concise and *brief* and at the same time comprehensive of all that are required by the laboratory worker.

B. P. TRIBEDI.

TRANSACTIONS OF THE (CALCUTTA) MEDICAL COLLEGE REUNION (1943-44), Vol. VI. Pages 52. Crown 8 vo. Published by Dr. P. K. Guha, 67, Dhurramtolla Street, Calcutta. Price Rs. 2|-.

It is apparent from the size and belated publication of the transactions, that the publishers had the same difficulty *i.e.* want of paper and Paper Control (Economy) Order like many others in the same time. It contains mainly the articles read in the Symposium on Toxaemia of Pregnancy and Arteriosclerosis. One is forced to admit that the former has been more elaborately dealt with than the latter, where one meets mainly a text book type of discussion. Perhaps due to the Paper Control (economy) Order, other valuable contributions could not be included. For an institution of more than a century old with about 1000 beds and a large outpatients department, this publication hardly reflects the ingenuity and dexterity of a group of brilliant medical men working in it. It is only up to them to publish their investigations and experience with proper data, so that mofussil practitioners may be benefited and thus raise the standard of medicine in this country.

B. P. NEOGY.

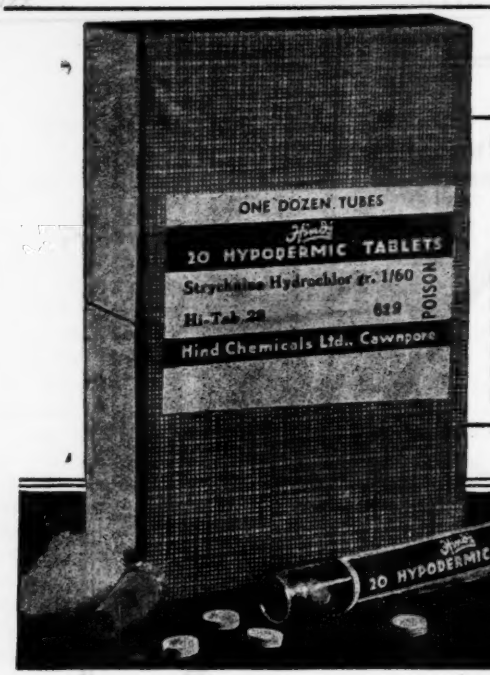
when **SULPHATHIAZOLE** has to be prescribed we invite you to prescribe

SUPPLIES:
Tablets, containers of 20, 25, 100, 500. Powder : Bottles of 15 gm.
Powder with 1% Proflavine : Bottles of 15 gm.
'THIAZAMIDE SODIUM' 6 × 1 gm.

The manufacture and sale of this product is fully protected by Indian patents Nos. 26513/39 and 26850/39 (May & Baker Ltd.), and by corresponding patents in many other countries.

MAY & BAKER LIMITED
Distributed by MAY & BAKER (INDIA) LTD.

526A



Hind's

HI-TAB
BRAND
HYPODERMIC TABLETS

Hi-Tab No.	Gr.	Hi-Tab No.	Gr.
2. Atropine Sulphate	1/100	18. Morphine Sulphate	1/4
3. Atropine Sulphate	1/60	Atropine Sulphate	1/150
4. Digitalin	1/100	19. Morphine Sulphate	1/3
5. Digitalin	1/100	Atropine Sulphate	1/120
Strychnine Sulphate	1/100	20. Morphine Sulphate	1/2
10. Morphine Hydrochlor	1/4	Atropine Sulphate	1/100
11. Morphine Hydrochlor	1/3	26. Strychnine Hydrochlor	1/200
12. Morphine Hydrochlor	1/2	27. Strychnine Hydrochlor	1/100
14. Morphine Sulphate	1/4	28. Strychnine Hydrochlor	1/60
15. Morphine Sulphate	1/3	29. Strychnine Sulphate	1/150
16. Morphine Sulphate	1/2	30. Strychnine Sulphate	1/100
		31. Strychnine Sulphate	1/60

HIND CHEMICALS LTD., CAWNPORE

HI-TABS are used by civil and military doctors with confidence.
- Purity of ingredients.
- Accuracy of dosage.
- Care and sterility during manufacture.

Send for catalogue :—

Bombay Branch:
6, PHIROZSHAH MEHTA ROAD
PHONE 34205

Punjab:
KISHAN CHAND & Co., Ltd.
ANARKALI, LAHORE

Distributors for :
Delhi:
LAMB BROS.,
P. O. BOX III

Sind & N. W. India:
LAMB BROS.
BUNDER ROAD, KARACHI

The Doctors' prescription for.. FEMININE AILMENTS

A well-balanced and palatable prescription of tonic, sedative and laxative drugs with vitamins and hormones

ASOKOLETRIS

- **GENERAL & UTERINE TONIC**
- **MENSTRUAL TROUBLES**
- **LEUCORRHEA**
- **ANTE-, & POST-NATAL TONIC**
- **CLIMACTERIC COMPLAINTS**

Send for detailed literature from:

HIND CHEMICALS LTD.
CAWNPORE

Distributors for:

Bombay Branch:
6, PHIROZSHAH MEHTA ROAD
Phone: 34205

Lucknow Branch:
14, THE MALL,
Hazratganj.

Punjab:
KISHAN CHAND & CO. LTD.,
Anarkali. Lahore

Delhi:
LAMB BROS.,
P.O. BOX III

Sind & N. W. India:
LAMB BROS.
BUNDER ROAD, KARACHI

OF NICOTINIC ACID

Nicotinic Acid is the pellagra preventive factor of the Vitamin B and indicated whenever such deficiency diseases are to be treated by means of Nicotinic Acid.

Each tablet contains 50 mgms. of pure Nicotinic Acid.

Dose: 1 to 2 tablets three times a day or as directed by the Physician.

Alembic

NICONIN

NICOTINIC ACID TABLETS

ALEMBIC CHEMICAL WORKS COMPANY LIMITED, BARODA.

EVERYTHING FOR A DOCTOR

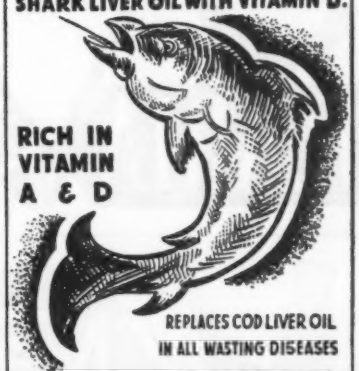
Record syringes 2 5 10 20
Sup. Eng. Rs. 12|12, 16|-, 18|12, 23|12
All glass Rs. 8|-, 12|8, 16|8, 21|-
Needles Rs. 5/4 Doz. Glass MT. Rs. 8/8 Doz.
Cholera apparatus Rogers Rs. 19/8
Saline apparatus 300 c.c. Rs. 10/-, 500 c.c. 14/-
Stethoscope AVONSCOPE Rs. 14/8, Sup. tube Rs. 2/- yd.
Hæmocytometers Improved Neuber complete Double chamber Rs. 69/- Single chamber Rs. 55/-
„ spare chamber Rs. 59/- „ Rs. 44/-
„ „ Eng. Neuber or other Single Rs. 33/- and Double Rs. 46/-
„ spare cover Glass U.S.A. Rs. 2/8
„ pipette Rs. 4/14
Hæmometer Sahlis U.S.A. Rs. 95/-
Blood sedimentation pipette Westergeen Rs. 5/4
„ stand for above for 3 Rs. 5/- for 6 Rs. 8/8
Kahn's Test outfit complete Rs. 42/-
Widal Test outfit complete Rs. 9/4

ZILL & CO.

PRINCESS STREET BOMBAY No. 2.
Ref: 33 *Lists on request*

Sharkol-D

SHARK LIVER OIL WITH VITAMIN D.



PRIMCO LIMITED
(SUCCESSORS TO CHEM AGENCIES)

HEAD OFFICE:
LAMINGTON ROAD, BOMBAY - 4

Branches:

Thambu Chetty St. G. T., MADRAS

66, College St. CALCUTTA

FILARIA

"ROSBAY" (Oral or Injection) the best tried remedy hitherto proved effective in Elephantiasis, Lymph Scrotum, Chyluria, Chylocele, Orchitis, Varicose Groin Glands, Lymphangitis etc. after failure of other drugs. Contains Tr. Rosebay and a radio-active element but no arsenic, antimony or vaccine. No by-effect or after-effect. *Literatures etc. on request to—*

ROSBAY & CO.
185, CHITTARANJAN AVENUE, CALCUTTA

Insist on:

IMMUNO'S

Syrups: Easton's Syrup, Syrup Vasaka, etc.
Liquid Extracts: Ext. Kurchi, Ext. Kalmegh, Ext. Chhatim, etc.

&

LIVER TONIC

Ask for Samples, price lists and other particulars.
Products of
Immuno Chemical Laboratory Ltd.,
79, PUDDAPUKUR ROAD, BHOWANIPUR,
CALCUTTA.

Agent:—**S. B. JAMAL & Co.,** 17A, General Patters Road. Mount Road, Madras.

For
Filarial Scrotum, Legs, Hands,
Weeping Breasts & Every Form of
FILARIASIS
Particulars free from
CALCUTTA CLINICAL RESEARCH
6, CHOWRINGHEE ROAD, CALCUTTA.

Neo-Calcin
INTRAMUSCULAR
Calcium, Choline with Liver Ext. Vitamin B Complex & C.
Demand more result in all Calcium treatment.
For Particulars Apply to:—
MODERN DRUG HOUSE
72 B ASHUTOSH MUKHERJEE ROAD - CALCUTTA.

Free Samples to Profession on request.

Pre-digested Protein food for Invalids
Proto-Nutron and Vege-Nutron are predigested proteins specially beneficial to invalids and convalescents. The former is prepared from meat while the latter from milk and vegetables for vegetarians.
Proto-Nutron and Vege-Nutron can be administered both orally and rectally.
PROTO-NUTRON AND VEGE-NUTRON

A BIRLA LABORATORIES PRODUCT

Sales Office: 64, Pathuriaghat Street, Calcutta.

NAVARATNA PHARMACEUTICAL LABORATORIES

OFFER

SYRUP PERTUSOL

Composition:—

Ex: Pitvan	3	grs.
Indian Nightshade	3	„
Gainari	3	„
Ephedra Vulgaris	3	„
Syrup Ajowan	3	mins.
Syrup Vasaka add	1	dr.

For the effective treatment of Whooping cough Acute and Chronic Bronchitis.

ELX: GYNÆ CO.

Composition:—

Ext. Lodh Liq.	10	mins.
Ext. Mootha	6	„
Ext. Ashoka	15	„
Ext. Beriberris	5	„
Ext. Viburnum	6	„
Nigalla Sativa	4	grs.
Woodfordia	4	„
Water Lilly	4	„
Syrup Calcii add	1	dr.

For the effective treatment of Menorrhagia, certain forms of Dysmenorrhœa & Amenorrhœa.

AND STANDARDIZED LIQUID EXTRACTS OF SELECTED INDIGENOUS DRUGS

Detailed Catalogue regarding our products may be had from our Medical representatives or from Head Office, Cochin.

Our products are available at all leading Chemists.

NAVARATNA PHARMACEUTICAL LABORATORIES

Post Box No. 13, MATTANCHERRY P.O.
(COCHIN)

Another new contribution in the Chemotherapeutic line prepared in our Laboratory for the first time in India.

Solustibol

A Sterile Solution of antimony V hexonate containing 20 mg. of Pentavalent Antimony per c.c.

The **SAFEST** and **NONTOXIC** intramuscular therapy in the treatment of

KALAAZAR.

(Tested in a Laboratory of the Government of India)

Particulars from—

ADCCO LIMITED
KALIGHAT , CALCUTTA

PURE VENOMS

COBRA	ORANGE SPIDER
VIPERS	CUBAN SPIDER
RATTLESNAKE	RED ANTS
BLISTERING FLY	HONEY BEE

Available in Therapeutic doses in 1 c.c., 2 c.c. ampuls.

Descriptive Booklet free to the Medical Profession only.

LEXIN LABORATORY
MIHIJAM E. I. R. (SP).

Specialities for the MEDICAL PROFESSION

ASOK CORDIAL:—(*a*) *with Vitamins and Hormones and* (*b*) *with Valerian, Bromide and Vitamins.*—A general uterine tonic and alterative in chronic uterine disorders of both structural and functional origin.

ANETONE:—(*with or without Strychnine*).—A palatable and readily assimilable blood forming tonic for primary and secondary Anæmia.

ASWARIN:—A composition to tone up the central nervous system in a short time.

DIGESTIN:—A digestive elixir and tonic for dyspepsia, weakness and auto-intoxication.

BILITONE:—A liver tonic, cures biliary dysfunctions. It restores the liver to its normal functions.

QUINOGEN:—An ideal combination of anti-malarial and anti-anæmic tonic principles of indigenous and western extraction for the treatment of malaria.

Special reference is made to the high quality of I.C.T.W. products —ingredients selected for their purity and uniformity.

Therapeutic notes of these outstanding products are sent to members of the Medical Profession on request.

Indian Chemical & Therapeutical Works Ltd.

68, BARRACKPORE TRUNK ROAD, CALCUTTA.

A NEW EFFICIENT GALACTOGOGUE

PROLACTOL BRAND

Combination of certain edible oils and a highly assimilable compound of phosphorus

- PRODUCES RAPID RESPONSE.
- NO ALLERGIC SIDE EFFECTS.
- SAFE CONVENIENT ADMINISTRATION
- PRESENTED IN TABLET FORM.

DOSE : 2-3 TABS. T. D. S.
PACKING : 50 TABLETS.

•"ESTRINAL"

For Oral Oestrogenic Therapy.

Per Tablet:

STILBOESTROL ..	.. 1 mg.
PHENOBARBITAL	.. 20 mg.

Advantages: Lower Incidence of Nausea and other by-effects. More complete control of symptomatology including alleviation of nervous disturbances.

Indications :

Menopause, Amenorrhœa, Dismenorrhœa, etc.

Packing: Bottle of 25 Tabs.

IB TRADE MARK

DR. BHALCHANDRA LABORATORY, BOMBAY 4.

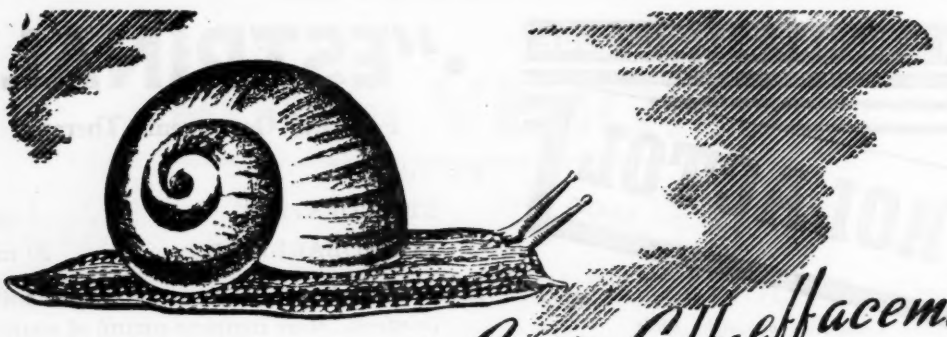
UKANE REMEDIES

THE PRODUCTS OF REPUTE AND GUARANTEE

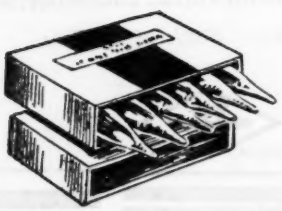
- **UKALCIN (plain)** for all Calcium Deficiency.
  UKALCIN WITH VITAMIN B Concentrates. In Malnutritions. Tuberculosis and Haemorrhage and Anemias.
  UKALCIN WITH VITAMIN B CONCENTRATES AND VITAMIN D. Advance Therapy in Tuberculosis. Cardio-Tonic and Stimulant. Invaluable for expectant Mothers, Pernicious and Tropical Anemias.
  UKALCIN (injectable)—Calcium Gluconate 10 per cent in Sterile Pyrogen free water.
- **UKOMINT** for Coughs, Bronchitis, Colds, Asthma and Bronchial Asthma.
- **CALCIUM LACTATE WITH VITAMIN D** for Depraved Nutrition, Pregnancy, Lactation and Rickets.
- **YEAST TABLETS** Guaranteed to contain 25 international Units of Vitamin B^1.
  Accepted as dependable products by the leading physicians.

For free Clinical samples and Literature apply,

Ukane Pharmaceutical & Chemical Works.
TAGORE ROAD, SANTA CRUZ, BOMBAY 25.



Snail's Self-effacement
TO REMOVE HUMAN SUFFERING



ARSO-PEPTIDE

offers the latest rational therapy in
ASTHMA AND FILARIASIS
It contains a special allergy desensitising polypeptide, derived from crustaceans, in stable organic arsenic solution.
ISSUED IN BOX OF 6×1 C.C. AMPOULES.
N. B. IT DOES NOT CONTAIN ANY VACCINE.
FOR SAMPLES AND LITERATURES WRITE TO:

UNIQUE DRUG HOUSE LTD. : 23, ISWAR MILL LANE CALCUTTA

LESCO

GALENICALS

Safely

commended to

THE MEDICAL PROFESSION

Our Prices are always Cheap
Consistent with Quality

• VITOSTROL

Vitamins A & D concentrate containing Vitamin A 12,000 I.U. and Vitamin D 2,000 I.U. per c.c.

Richer than Cod liver Oil.

Anti-infective and Growth-promoting.

Available in 10 c.c. Phials.

• BRONTON

Effective Cough cure

containing

Ext. Ipecac. liq., Ext. Senega liq., Ext. Scillæ. liq., Ext. Pruni Virg. liq., Tr. Pipali Co., Glycyrrhizin., Ephedrine Hydro., Pot. Guacol-Sulphonate, Syrup, Aromatics, etc.

Available in 5 fluid oz. bottles.

• ADRENOLEUM

Adrenalin in Oily base

For Prolonged and Sustained action of Adrenalin.

Only for intramuscular therapy.

Available in 1 c.c. & ½ c.c., 6 amp. boxes.

• LESCODOMIDE

Sulphanilamide Ointment c̄ Cod liver Oil.

Outstanding Application in Streptococcal Infections assuring growth of healthy granulation-tissue.

Available in 1 oz. Phials.

LESCO

Literatures on Request.

Lesco Chemical Works Ltd.

BHARAT BUILDINGS LAHORE

XUM

is prepared from exsiccated Ferrous Sulphate with traces of Copper and Manganese. Iron medication in ferrous condition is better assimilable and this action is further enhanced by the presence of Copper and Manganese in very small quantities.

Therapeutically each Feroate tablet is equivalent to 7½ grains of Blaud's Pill or 15 grains of Ferri Et Ammon Citras B. P. and affords a very convenient and effective means of administering iron.

Composition : Each tablet contains 1½ grs. of exsiccated ferrous sulphate, providing ½ gr. of iron in ferrous condition along with traces of copper and manganese.

Indications : Nutritional deficiency, impoverished condition of blood, expectant and nursing mothers.

ALEMBIC CHEMICAL WORKS COMPANY, LIMITED, BARODA

AL III

Announcement

UREA-STIBAMINE (According to Dr. Brahmachari's formula)—The safest and non-toxic intramuscular injection in the treatment of KALA-AZAR. TESTED BY THE REPUTED STANDARDISATION LABORATORY.

SPIROCIN—An organic Arsenic preparation specific for Syphilis. Issued with Spirocin solvent. TESTED BY THE REPUTED STANDARDISATION LABORATORY and found to be least toxic at the same time most efficacious.

Lister Antiseptics

COSSIPORE :: :: CALCUTTA

A. D. Announces

NEO-VINA—An ideal restorative tonic. Particularly for expectant and nursing mothers and also for the convalescent stage, mental fatigue and loss of vigour.—A TONIC PAR EXCELLENCE. Phials of four ounce and eight ounce.

ORANGE-VITOL—(Preparation of vitamins A, C and D). It contains vitamins A and D of Halibut Oil reinforced by the addition of Calciferol to which vitamin C of fresh Orange and Amla Juice are added. Indicated in Rickets Malnutrition and wasting diseases. Phial of six ounce.

AD

Asia Drug Co., Ltd.

DASSNAGAR :: BENGAL

City Sales Office—29, STRAND RD., CALCUTTA.

HABIT-THE ENEMY OF REASON

In the matter of nourishment, many people continue to choose what they like or what they are accustomed to, rather than what is necessary for good health.

A report issued by recognized authorities on nutrition points out that "there is a high proportion of poor diets among the employed population," and, as a result, "dietary inadequacies and malnutrition of varying degrees are of frequent occurence." Deficiencies of the vitamin B complex are considered the most serious of all, and wartime rationing can hardly be expected to improve this situation.

Adequate, well-balanced diets are difficult to select, and even more difficult to obtain. This, in addition to the fact that improper eating habits are hard to correct, indicates the administration of vitamin supplements.

Elixir 'B-G-Phos' is designed for the prophylaxis or treatment of vitamin B complex-deficiency, providing all the essential B factors and glycerophosphates as well.

Supplied in Bottles of 8 and 16 oz.

ELIXIR
B-G-PHOS
Sharp & Dohme
PHILADELPHIA

SCIENTIFIC LITERATURE ON REQUEST FROM VOLKART BROTHERS, BOMBAY P. O. BOX 199

SOLE IMPORTERS FOR INDIA, BURMA & CEYLON

VOLKART VB BROTHERS

BOMBAY - CALCUTTA - CAWNPORE - KARACHI - LAHORE - DELHI - MADRAS - COCHIN - COLOMBO

SUBSTITUTE FOR COD LIVER OIL

"Morhusyn"

MORHUSYN is an effective improvement over Cod Liver Oil, without any of its disagreeable taste or smell. It is a valuable nutritive tonic, most easily assimilable and non-constipating.

Morhusyn is especially indicated for improving weight and improving the general conditions. Its effects are best seen in tuberculosis, all forms of wasting diseases, infections of the lungs or bronchi, and nutritional disorders. It is an ideal tonic for under-grown, undeveloped and undernourished children.

COMPOSITION: Active, essential constituents of fresh cod liver oil, oleum morrhuae, combined with traces of copper, manganese, iron, calcium, arsenic and juices of fresh fruits in a sweet medium.

Packing: 6 oz., 1 lb. and 1 gallon (for Hospitals)

SOME OTHER PRODUCTS: ADRENALINE chlor. amp.—ASMOSYN tab. (for asthma)—BLISTYN jelly (for burns)—CALCIUM-D tab. & syrup—CYLOTOSYN amp. (replacing Cytotropin)—EMETINE amp.—EPHEDRINE amp.—FEROSYN tonic (for anaemias)—IOSYN tab. (for arteriosclerosis)—PECTUSYN (cough syrup)—STRYCHNINE amp.—SYLAX (laxative)—SYNTONIC (tonic for adults and children)—TANNOSYN tab. (for diarrhoea).

SYNTETIC (INDIA) LTD. SLEATER RD. BOMBAY 7.

Copyright: Syntetic (India) Ltd. JWT(I) LTD.

ANOTHER SYNTETIC PRODUCT: "SCABYN"—antiscabio-sum—is a compound of Benzophenyl-mercury-fatty acids dissolved in neutral oil. SCABYN is specific against Scabies. Reliable action in Eczema, Acne, Pruritus, Pityriasis and Impetigo. *Packing*: 4 oz. & 1 lb.; also 1 gallon for Hospitals.

TRADE MARK TRADE MARK

Improved IODINE THERAPY

IOSYN

IOSYN is an albuminoid compound of iodine, containing approximately 12% iodine. IOSYN passes through the stomach without molesting and is absorbed in the small intestines. Due to the slow absorption and excretion it causes no irritation and has no undesirable after-effects. IOSYN is therefore much superior to inorganic iodine salts of potassium or sodium; and is ideal for prolonged iodine therapy.

INDICATED in all sclerotic and chronic inflammatory conditions, especially arteriosclerosis. For absorption of exudates in ascites, pleurisy, etc. As a metabolic agent and stabiliser in goitre, etc., and in all conditions where iodine is prescribed.

SOME OTHER PRODUCTS: ADRENALINE chlor. amp.—ASMOSYN tab. (for asthma)—BLISTYN jelly (for burns)—CALCIUM-D tab. and syrup—CYLOTOSYN amp. (replacing Cytotropin)—EMETINE amp.—EPHEDRINE amp.—FEROSYN tonic (for anaemias)—MORHUSYN (substitute for Cod Liver Oil)—PECTUSYN (cough syrup)—SCABYN (antiscabiosum)—STRYCHNINE amp.—SYLAX (laxative)—SYNTONIC (tonic for adults and children)—TANNOSYN tab. (for diarrhoea).

Containers of 50, 100 and 500 tablets.

SYNTETIC (INDIA) LTD. Sleater Road, Bombay 7.

TRADE MARK

Copyright: Syntetic (India) Ltd. JWT(I) LTD.

DOCTORS HOSPITALS DISPENSARIES

Obtain your supplies from direct Importers and Manufacturers of the following. We receive regular consignments from our office in U. K. and thereby can guarantee quality goods at moderate rates.

INJECTIONS

Liver Extract. Emetin Hydrochloride. Digitalin and Strychnine. Atropine Sulphate. Sodium Cacodylate. Ephedrine Hydrochloride, etc., etc.

TABLETS

Calcium Gluconate. Calcium Lactate. Yeast. Vitamin B_1. Sulphanilamide. Sulphaguanidine. Sulphadiazine. Aspirin, Phenacetin and Caffein, etc.

DRUGS

Phenazone. Chlorodyne. Sodium Salicylate. Potass Bromide. Acriflavin. Potass Citrate. Homatropin Hydrobrom. Mercurochrome, etc., etc.

SURGICAL SUNDRIES

Adhesive Plaster (Zinc Oxide). Record Syringes. Rubber Surgical Gloves. Clinical Thermometers. Rubber Stethescope tubing, etc., etc.

We shall be pleased to furnish complete Price List on application. Write to:—

CROYDON CHEMICAL WORKS,

47, Alli Chambers,

Medows Street, Fort, BOMBAY.

Original O.C.W. Products

VIO-STEROLIN

A concentrated tasteless liquid preparation of Vitamin A and D

Contains:
Vitamin A—12500 i.u. per c.c.
Vitamin D— 5000 i.u. „ „

Promotes assimilation of Calcium and Phosphorus.
Acts as a Super Tonic for wasting diseases.
Invaluable aid to expectant and nursing mothers.
Builds strong bones and Bonny Babies.

NEUROSIN

Containing:
Camphor Monobrom, Ext. Valerian, Ext. Belladona, Pulv. Ipecac, Phenolphthalene, Luminol, Calcium Glycerophos etc.

For

Hysteria, Chorea, Reflex Neurosis of all Types, Dysmenorrhoea and all neurotic conditions specially associated with uterine troubles.

ORIENTAL CHEMICAL WORKS LTD.

8/2, Bejoy Basu Road, Calcutta
Branch Factory—Salempur—Chapra

YOURS FOR THE ASKING

Those were the days! When your dealer had ample stocks on his shelves—when Brand's Essence of Chicken was yours for the asking.

Made from plump English chickens it is easy to take and puts no strain on the digestion. Brand's accelerates recovery after serious illnesses.

Shipments to India are at present restricted by Government, and the present short supplies are mainly used for wounded, convalescents and war workers on the fighting and home fronts.

BRAND'S ESSENCE OF CHICKEN

Manufactured by

BRAND & CO., LTD., LONDON

Agents:

GRAHAMS TRADING CO., (INDIA) LTD.

Just as expert servicing keeps YOUR CAR running smoothly

. . . so VICTOR'S P. I. and A. Service keeps FINE X-RAY EQUIPMENT operating at top efficiency

The greater your investment in fine equipment, the more important it is that you protect it with proper use and care. Neglect will lower efficiency and necessitate costly repairs in the end—and perhaps expensive travel to make them.

Victor's **Periodic Inspection and Adjustment Service** prevents breakdown of X-ray apparatus from neglect, because at specified intervals a trained service engineer, covering a planned route, gives essential attention. Hundreds of users deem that indispensable. Many of them have been renewing their P. I. and A. contracts every year for 13 years.

Through Victor's branch offices in every part of India, P. I. and A. service is readily available. For particulars, without obligation, visit or write your nearest Victor office.

VICTOR X-RAY CORPORATION (INDIA) LTD.

BOMBAY : Ballard Estate, P. O. Box 992; — CALCUTTA : 7, Wellesley Place, P. O. Box 2007;
LAHORE : The Mall, P. O. Box 181; — LUCKNOW : Wescott Ganj Road, Nazarbagh;
NEW DELHI : No. 8, Todarmal Lane, P. O. Box 67; — BANGALORE CITY : Sri Narasimharaj Road, P. O. Box 58.

UREA SULPHAZIDE

THE SULPHONAMIDE COMPOUND.

Has stood the test of time after extensive use because of its excellent efficiency. On account of its low toxicity treatment with Urea Sulphazide may be continued for a reasonably prolonged period. Administered as a curative in infective conditions in which it is indicated.

RED SOLUTION
&
WHITE TABLET

UNION DRUG CO. LTD. CALCUTTA.

285, BOWBAZAR STREET,

T'Phones:—
Cal. 1159.
Cal. 4975.

T'Gram:—
"Benzoic" Cal.

Quino-Gluconate

FOR MALARIA

It is a specific anti-malarial remedy containing 8 grs. of quinine alkaloid in each 5 c.c. ampoule. Its parasiticidal action has been evident even in the most resistant types of plasmodial infections. Unlike ordinary quinine injection, it is almost painless.

The policy of the Gluconate Ltd. is to uphold the highest standard in pharmaceutical manufacture consistent with modern research both in India and abroad.

A PRODUCT OF GLUCONATE LTD.,

Agents:

THE ORIENTAL MERCANTILE CO. LTD.,

Head Office: 36 A & B, Pratapaditya Road, Calcutta.

Branch Office: 11, Bank Street, Fort Bombay.

Printed by B. K. Sen at MODERN INDIA PRESS, 7, WELLINGTON SQUARE, CALCUTTA and published by DR. PRAKASH CHANDRA GHOSH. at Hindusthan Buildings, Room No. 23, Corporation Place, Calcutta.

FOR THE MEDICAL HALL OF FAME

CIBAZOL

(2-SULFANILYL-AMINOTHIAZOLE)

For the Specific treatment of:

PNEUMONIA, GONORRHŒA, BACILLARY DYSENTERY
STREPTOCOCCAL and STAPHYLOCOCCAL INFECTIONS
AND OTHER ALLIED INDICATIONS.

Available in Tablets for oral treatment and Powder and Ointment for local application.

Sole Importers :

CIBA (INDIA) LIMITED.

PHARMACEUTICAL DEPARTMENT

P. O. Box 479 - BOMBAY.

643

will be called upon to tackle when they go to work in the villages.

The Committee suggested that, during this period, besides general knowledge, the trainees should learn spinning, sewing, tailoring, cooking, physical exercise, cleaning the latrines and should also cover the syllabus of first aid and home nursing prepared by the Advisory Medical Board.

Gandhiji had referred to the Committee the question of the cholera epidemic now raging in C. P. Recommendations were made with regard to preventive and curative measures. It was also recommended that Dr. Sushila Nayyar should go to Wardha and meet local medical practitioners with a view to seeking their assistance for organising medical relief in the villages round about Wardha.

Gandhiji had also referred to the Committee the acute water shortage in some parts of Maharashtra, especially Konkan. The matter is being looked into.—*Eastern Express.*

DRUG CONTROL ADVISORY COMMITTEE, BOMBAY

Extract from the minutes of the 3rd meeting of the Provincial Drug Control Advisory Committee held on 5-9-45 in the office of the Commissioner of Excise, Old Custom House, Bombay.

Item 2 of the Agenda, namely the discontinuance of the purchaser's licence for the doctors was taken up for consideration:

Dr. Chamanlal M. Mehta, President of the Bombay Medical Association explaining his proposal said that the drugs in short supply were very few and as such there was no need to control the distribution of the drugs. He explained that the circumstances under which the medical profession had originally agreed to take out a purchaser's license did not exist now and suggested that doctors should be exempted altogether from the degradation of taking out a purchaser's license or permit. The end of European war had materially altered the circumstances and now the import of drugs is safe and there is not likely to be any short supply of drugs. The fact that doctors are registered should be sufficient to justify the grant of the privilege of getting drugs without licenses. In addition he protested against the fee of Rs. 15|- for the purchaser's license which was considered to be a sort of professional tax. He therefore urged that doctors should not be expected to take out purchaser's permits especially as they were usually given complimentary discount even by retailers and could invariably rely on the importers to supply them with drugs which were in short supply.

Dr. Velkar, representative of the Bombay Medical Union, supported the proposal made by Dr. Chamanlal M. Mehta, but said that the doctors who rendered humanitarian services to the public should have free access to importers by means of the Purchaser's permit, but the latter should either be free of license fee or at least be at reduced fee but that in any case the privileges must remain. The Surgeon General opined that the situation regarding stocks of imported drugs had improved of late and that it may further improve on release of stocks by the Military. There was a lengthy discussion on the proposal during which Col Sokhey pointed out that the doctors' business was more or less a trade and here it was suggested that the license may be altered (as discussed before the Central Drugs Control Advisory Meetings) into a permit and that the license fee be reduced to a nominal fee of Rs. 5|- or lower. Dr. Velkar said that Doctors should be exempted from payment of any fees, but yet should exercise all the existing privileges. Mr. Feith explained in short what had taken place at the meeting of the Central Drugs Control Advisory Committee and Dr. Hamied who attended the meeting gave the members to understand that the proposal was likely to find favour at the next meeting of the committee, if it was recommended by the provincial committee. He added that the Central Committee was likely to hold its next meeting some time in November next. The discussion then centred round the privileges of doctors and it was argued that they should be able to get drugs from importers and manufacturers also. Col. Sokhey however appeared to favour the view that doctors should be placed in the same position as any one else and therefore the Purchaser's license should be discontinued. Mr. Hukmichand Vassanji expressed the opinion that when the stock position is so easy as at present everybody will go to the doctors instead of their having to go to the retailers for their drugs. Mr. Branble supported the proposal, while the Surgeon General advised that it may be recommended with modification that the whole question be left for the consideration of the Government of India in the light of the present conditions.

The Chairman summing up the views of the members suggested that the proposal would be recommended as the majority was in favour.

WAR TIME HOSPITAL IN INDIA

Dr. B. C. Roy, President, Indian Medical Council, has issued the following statement:—"The appeal issued by Pandit Nehru to the Army authorities, particularly the Americans, for handing over hospital appliances, equipment and buildings set up for military purpose to civilian use is a timely one in view of the great need for hospital accommodation in this country, a need for which was emphasised by the members of the public and the practitioners alike who appealed before the Bhore Committee at different parts of the country.

In view of paucity of beds as far back as October, 1943 the Health Survey and Development Committee of which Sir Joseph Bhore is the Chairman requested the Government of India to take steps immediately on cessation of the war to utilise the so-called temporary hospitals erected for military personnel in order that the civilian population in the country might be benefited. The Committee at its sitting recently reiterated this request. I join to the appeal of Pandit Nehru to the Governments in India and the U. K. and U.S.A. army authorities concerned to take immediate steps now that the hostilities are at an end and ensure utilisation of the existing buildings which had been built up for the war purposes for civilian use and that the equipment and appliances therein to meet civil health requirements at an earliest possible moment."—*A. B. Patrika.*

A DISTINGUISHED MEDICAL WOMAN

Dr. Janet M. Vaughan, a well known hæmatologist, whose book "The Anæmias" is in its second edition, has been appointed principal of Somerville College (a Women's College), Oxford, Dr. Vaughan is medical officer in charge of the North West London Blood Supply Depot for the Medical Research Council. She was an undergraduate of Somerville College and took a first class in physiology in 1922 and her D.M. degree in 1930. She has been a Rockefeller fellow, a Beit memorial fellow and a Leverhulme fellow. She has held the post of assistant patho-

logist at University College Hospital, and the British Postgraduate Medical School. She was a member of the Interdepartmental Committee on Medical Schools and is member of the Royal Commission on Equal Pay for Women and of the body appointed by the government to investigate public health in India.—*J.A.M.A.*

BICENTENARY CELEBRATION OF THE ROTUNDA HOSPITAL

The Rotunda Hospital, Dublin, was founded in 1745 by a physician, Bartholomew Mosse, and is the oldest maternity hospital in the British Isles. Its fame as a teaching centre is widespread, and students come to it from all over the world. Its bicentenary falls this year, but, in consequence of the disturbance produced by the war, celebration is deferred until the second week of July 1947, when an International Congress of Obstetrics and Gynæcology will be held in Dublin, primarily under the auspices of the Rotunda Hospital but with the cooperation of the other two Dublin maternity hospitals. The principal subjects contemplated for discussion are eclampsia, sepsis, obstetric shock, fætal mortality and the modern approach to the problem of sterility.—*J.A.M.A.*

ANTIMALARIA MEASURES IN INDIA

In the annual report of the Ross Institute of Tropical Hygiene, India Branch, for the year 1942-43 mention was made of a summary by Dr. G. C. Ramsay of antimalaria measures that had been found effective in North-Eastern India. In the report for 1943-44 (office of the Committee of Control, Royal Exchange, Calcutta) this summary has been brought up to date in the hope that it will serve the useful purpose of its predecessor in describing and illustrating the progressive antimalaria measures which the Ross Institute is able from experience to commend for adoption by subscribing interests, by the armed forces, and by others concerned in the control of malaria in this region. Among such results of special experience stressed in the present report is the danger of surface drainage as an antimalaria measure where the vector species are *A. minimus* and *A. fluviatilis*. These species favour above all for their breeding places small sluggish streams or watercourses. An open drain may thus create an even more dangerous breeding-ground than the original swamp, which may have been relatively harmless because of covering vegetation. Again, drains effective when first made are apt to become dangerous by growth of grassy edges or other changes which occur in the course of time. Hence, as the report emphasizes, in the areas where A. minimus and A. fluviatilis are the chief carriers surface drainage should be so far as possible minimized, and where drains are necessary they must be constantly controlled by weeding, canalization, oiling, shading, flushing, herbage packing, or lining with cement. The use of shade over drains continues to be one of the most important measures, and attention is drawn to the "beehive" or "pent-house' pruning now being adopted in some districts. This gives the maximum amount of foliage thereby further reducing the possibility of grass or weeds becoming established in the channels. Flushing by automatic siphon continues to grow in importance as a method of control, and some estates in South India formerly hyperendemic are now practically free from malaria owing to flushing measures. Some remarks are made in regard to misconception as to the practical limits of this method, which are by no means confined to small installations. The serious danger from irrigation, hydro-electric schemes, construction of railways and roads, and other sources of man-made malaria arising from engineering works is stressed and the suggestion made that engineers should receive training in antimalaria work. Though the report is commendably modest in size it is a most useful and helpful publication, and should be closely studied by all who are engaged in antimalaria work in these regions.—*Brit. M. J.*

A NEW INSECTICIDE

In a lecture to the Society of Chemical Industry, Dr. Roland Slade of Imperial Chemical Industries announced the discovery of a remarkable new insecticide with a wide range of uses, gammexane, which is the gamma isomer of benzene hexachloride ($C_6H_6Cl_6$). This was isolated early in 1943 and was found to be more toxic to weevils than any substance previously tested. There is every indication that it is much more toxic in locust baits than anything used heretofore. It has numerous medical, veterinary and agricultural uses. Experiments in the field against wireworm have led to the hope that we have found at last a means of fighting this pest, which causes the failure of so many farmers crops in Britain. Gammexane has proved highly toxic to lice and fleas. Dusts, sprays and paints have been used experimentally on the surfaces of rooms and rendered them toxic to any flies that walked over them.—*J.A.M.A.*

MRS. T. WELLS FUND, I.M.A.

The following further contributions to the fund have been received:

1. *Bijnore Branch*: Drs. H. N. Gupta Rs. 5|-; Kishan Chandra Rs. 2|-; B. L. Agrawal Rs. 2|-; C. L. Sahi Rs. 2|-; B. S. Gupta Rs. 2|-; M. H. Zafar Rs. 2|-; H. A. K. Lodi Re. 1|-. Total Rs. 16|-.

2. *Gujranwala Branch*: Drs. Surindro Nath Rs. 10|-; Siri Chand Rs. 2|-; Kasuri Lal Rs. 5|-; Ghulam Haidar Rs. 5|-; Jaswant Rai Rs. 5|-; Des Raj Arora Rs. 5|-; Mohindar Singh Rs. 2|-; Girdhari Lal Rs. 5|-; Ladha Singh Rs. 5|-; Hans Raj Rs. 5|-; Jamiat Singh Rs. 5|-; Tara Chand Rs. 3|-; Hassan Ali Rs. 2|-; Des Raj Bhasin Rs. 5|-; Nand Lal Rs. 3|-; Fazal Hussain Rs. 5|-; Kirpal Singh Rs. 3|-; Mahraj Kishan Rs. 5|-. Total Rs. 80|-.

3. Dr. A. K. Chakraborty (Calcutta) Rs. 10|-.

4. *Kishanganj Branch*: Rs. 20|-.

5. *Bulandshahr Branch*: Drs. H. N. Beri Rs. 10|-; S. L. Rajora Rs. 5|-; Ratanlal Khanje Rs. 2|-; Gauri Shanker Gupta Rs. 2|-; Anand Swarup Sharma Rs. 2|-; Makhanlal Sharma Rs. 2|-; Siri Krishna Bhatnagar Rs. 2|-; Chunilal Sharma Rs. 2|-. Total Rs. 27|-.

6. *Lahore Branch*: Drs. E. P. Bharucha Rs. 25|-; Devi Chand Gupta Rs. 5|-; R. L. Dongrey Rs. 5|-; V. D. Mallick Rs. 5|-; Khushi Ram Joneja Rs. 5|-; Udhan Singh Rs. 10|-; Gyan Chand Bajaj Rs. 5|-; T. N. Bhan Rs. 5|-; A. P. Khullar Rs. 10|-; Raghu Nath Sahai Chawla Rs. 5|-; M. L. Aggarwal Rs. 5|-; Rao Bahadur Dr. Ganesh Das Kapur Rs. 16|-; Drs. K. Manohar Rs. 10|-; Ram Labhaya Mullick Rs. 5|-; Gopal Das Jain Rs. 11|-; Om Parkash Khosla Rs. 25|-; J. C. Chugh Re. 1|-; Kundan Lal Chadda Rs. 10|-; Mohd. Abdul Haq Rs. 30|-; Gulzari Lall Rs. 25|-; Prem Nath Rs. 10|-; Capt. R. C. Gulatia Rs. 21|-; Major Uttam Singh Sidhu Rs. 25|-; Drs. Raja Ram Nayar Rs. 5|-; Baldev Singh (of Lahore) Rs. 10|-; Dina Nath Bhatnagar Rs. 10|-; N. C. Dey Rs. 5|-; Amrit Monga Rs. 5|-; Krishen Lal Khorana Rs. 5|-; Ganeshi Lal Aggarwal Rs. 11|-; Capt. R. Chand Rs. 21|-. Total Rs. 346|-. Grand Total Rs. 499|-.

CORRESPONDENCE

The Editor is not responsible for any views expressed by contributors.

FUTURE OF INDIAN MEDICAL OFFICERS IN THE PRESENT WAR

SIR,—Regarding the future of Indian medical officers who have been away On Active Service for a certain number of years, and will probably come back to find no future as certain others of us found in 1919 at the end of the last Great War, and for whom reasonable and remunerative worth must be obtained, I would put forward the following proposals:—

1. All civil hospitals to have an increased staff whereby patients might have attention at all times of the day and night (advantage to be taken of those nurses who have had experience of the A.N.S. to continue their services under government).

2. Government should arrange as a temporary measure, for villages to be supplied with doctors and nurses on a scheme similar to that developed in Scotland under the Highlands and Islands Scheme, whereby an annual salary was granted plus scale of fees for those who could afford it plus mileage allowance. This scheme worked well on the whole.

3. Refugee practitioners who have fattened at the expense of the humbler during war should be returned to their homes.

4. Medical Associations should be more powerful in carrying out their local laws of medical ethics and refuse to deal with quacks who are allowed to advertise themselves in papers and telephone directories as specialist in all sorts of multifarious diseases. Therefore no person should be allowed general practice until he fulfils the requirements of the medical registration acts of the various provinces. At the same time I would suggest that so called consultants and specialists should not do any general practice.

These are only temporary measures, which can be carried out, prior to the day, when under a properly established local and central government we as a body of medical men can develop a complete scheme of National Health Insurance or a system of preventive medicine. This will cost money but it can and must be found. I am etc.

7-9-45 RICHARD A. BARLOW,
Savoy Hotel, Mussori. B.SC., M.B.Ch.B., F.R F.P.S.

DOCTORS FOR ATTENDING ON MEDICAL PRACTITIONERS AND THEIR DEPENDENTS

SIR,—It is a matter of deep regret that when a doctor falls ill or his nearest dependents fall ill, it becomes almost impossible to get any expert medical attendance. I shall give a few concrete examples:—

1. My son got erysipelas and I tried to get a doctor to attend on him at night while the child was geeting very high temperature and convulsions. One surgeon advised me on the telephone to put him on bromides till next morning and he might come and see him at 1 p.m. next day after his hospital hours.

2. One of my relatives who was also a medical practitioner died of cerebral hæmorrhage only a month back and his relatives and friends tried to get a doctor to attend on him, and offered any amount for his fees but failed to get any medical attendant till the last day when I managed to get one kind hearted doctor who was known to him from his childhood. Some of the doctors flatly denied to go, others put up a long date and one was ready to go for a fee but that also after 2 days.

3. Another doctor who is at present lying ill with cerebral thrombosis—a much respected doctor of Calcutta—who can claim most of the practitioners of Calcutta to be known to him—is practically going without any medical help. He is lying in a pitiable condition and out of regret he does not call any doctor now.

Taking similar examples, do you not think that it should be made an absolute rule that all the medical practitioners must charge their fees for attending on fellow practitioners and their relatives. Even if we have made a mistake in choosing this profession why should our innocent children and relatives suffer for it and go without treatment? The reason cannot be anything but money and if with all the money we earn we cannot get adequate medical relief we should better not call ourselves doctors. I am etc.

Calcutta, 15-9-45 S. K. Das.

REVIEWS

HAND-BOOK OF PRACTICAL BACTERIOLOGY—By T. J. Mackie and J. E. Mccartney. 7th Edition, 1945. Pages viii+720. Royal 8 vo. Published by E. S. Livingstone, 16 & 17 Teviot Place, Edinburgh.

There is hardly any need of stressing the growing importance of bacteriology in recent years specially with reference to better laboratory technique, more improved ideas on Immunity and the rapidly increasing stock of chemo-therapeutic drugs and antibiotic products of fungi and bacteria that hope to revolutionise the treatment of bacterial infection in course of a short time. As a successful exponent of the subject the present volume has already caught the attention of the student and the bacteriologist alike and does not require a fresh introduction. I cannot think of any laboratory worker who can do without this book. This latest edition is fully abreast of all recent developments that have been incorporated in the Appendix. The volume is concise and *brief* and at the same time comprehensive of all that are required by the laboratory worker.

B. P. TRIBEDI.

TRANSACTIONS OF THE (CALCUTTA) MEDICAL COLLEGE REUNION (1943-44), Vol. VI. Pages 52. Crown 8 vo. Published by Dr. P. K. Guha, 67, Dhurramtolla Street, Calcutta. Price Rs. 2|-.

It is apparent from the size and belated publication of the transactions, that the publishers had the same difficulty *i.e.* want of paper and Paper Control (Economy) Order like many others in the same time. It contains mainly the articles read in the Symposium on Toxaemia of Pregnancy and Arteriosclerosis. One is forced to admit that the former has been more elaborately dealt with than the latter, where one meets mainly a text book type of discussion. Perhaps due to the Paper Control (economy) Order, other valuable contributions could not be included. For an institution of more than a century old with about 1000 beds and a large outpatients department, this publication hardly reflects the ingenuity and dexterity of a group of brilliant medical men working in it. It is only up to them to publish their investigations and experience with proper data, so that mofussil practitioners may be benefited and thus raise the standard of medicine in this country.

B. P. NEOGY.